Avinashilingam Institute for Home Science and Higher Education for Women

(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956

Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Section 12 B

Coimbatore – 641 043, Tamil Nadu, India

Programme outcomes, Programme specific outcomes and course outcomes for all Programmes offered by Institution

PROGRAMME OUTCOMES

UG Programme

Aim

Develop students with basic knowledge and skills

- Develop wide knowledge in their major and allied subjects necessary to qualify for the degree
- Acquire a rich basket of value added courses, co- curricular courses, soft skills and communication skills instilling self-confidence and moral values
- Evolve physically and spiritually through personality re-engineering programmes, with regular sports, gym and yoga activities
- Demonstrate social responsibility through NCC/NSS activities in the campus and in the society
- Strengthen the higher order thinking skills and develop professionalism with the state of art ICT facilities
- Qualify for higher education, government services, industry needs and start up units through continuous practice of preparatory examinations

PG Programme

Aim

Develop professionally competent and ethically responsible individuals

- Comprehend advanced knowledge in the core and specialization subjects with relevant practical inputs
- Gain inter-disciplinary, multi-disciplinary professional competence as value additions
- Establish professional responsibility through mini project, summer internship, major project, field trip/ industrial visit and mentorship programmes
- Exhibit attitude, skills and knowledge of a well groomed personalityworking and soc environment
- Develop problem solving, decision making and communication Skills
- Explore research interest with creativity, advanced technology and sensitivity towards sustainable environment practices

M. Phil Programme

Aim

Provide concrete base for doctoral programme

- Develop theoretical knowledge and ethical issues in research perspectives
- Contribute knowledge in the process of finding solutions to emerging challenges
- Ability to identify, formulate and design the research problem and apply appropriate tools and techniques to conduct original research
- Professionally communicate and interact with all stakeholders
- Critically review their research outcomes with the societal needs

Ph. D Programme

Aim

Prepare research scholars with constructive competencies

- Design, develop and conduct original research and funded projects with competence and independence
- Understand research ethics and ensure supreme quality of honesty and integrity in research and academics
- Demonstrate presentation and scientific writing skills
- Promote international collaborative research work, develop patents and copy rights thus generating systematic scientific acumen
- Develop the aptitude and attitude towards knowledge creation and knowledge dissemination for the benefit of the common society

PROGRAMME SPECIFIC OUTCOMES OF UNDERGRADUATE AND POSTGRADUATE PROGRAMMES OFFERED BY THE INSTITUTE

School of Home Science

Department of Resource Management	
B.Sc. Interior Design and Resource Management	
PSO1:	Exhibit efficient resource use potentials at home and work
PSO2:	Show case domain specific role clarity
PSO3:	Shine as competent graduates
PSO4:	Appreciate nuances of value based quality life skill oriented learning
PSO5:	Blend relevant instructions with real time applications in career.
M.Sc. Interior Design and Resource Management	
PSO1:	Apply lateral thinking with techno fervor
PSO2:	Act as proactive agents of change
PSO3:	Enjoy a competitive edge in career options
PSO4:	Buttress technological linkages for professional development
PS05:	Be committed as responsible consumers and able designers
M.Phil. Resource Management	
PSO1:	Acquire in-depth knowledge in defined areas of resource management
PSO2:	Develop and enhance individual leadership and teaching skills
PSO3:	Emerge as excellent researches in their field of study
Ph.D., Resource Management	
PSO1:	Exhibit efficient resource use potentials in the field of resource management
PSO2:	Work with eminent professionals to ensure quality in research and aspire for wider reach
PSO3:	Prepare them to tackle issues related to their field of study
Department of Food Service Management and Dietetics	
B.Sc. Food Service Management and Dietetics	
PSO1:	Know and understand scientific principle and techniques of food production in hospital dietaries and hospitality sector.
PSO2:	Comprehend and apply analytical principles of nutrients, food products, food quality and formulate diets.
PSO3:	Demonstrate effective utilization and management of resources.
PSO4:	Acquire skills in organization and management of hospital dietaries and food service institutions.
PSO5:	Become a successful entrepreneur, professional and pursue higher education.

M.Sc. Food Service Management and Dietetics	
PSO1:	Understand the core knowledge of food service management and dietetics in -depth
PSO2:	Ability to counsel, apply, synthesize novel approaches relating to food science, diet formulations in the treatment of communicable and non –communicable disease.
PSO3:	Capability to differentiate, evaluate and develop unique food product for all age groups to foster healthy society
PSO4:	Manage and administrate of hospital /hotel food service effectively
PSO5:	Competent to perform experimental, clinical and translation research in disease prevention and utilization of food service resources.
PSO6:	Become a successful professional, entrepreneur and researchers to peruse higher education.
PG Diploma in Nutrition and Dietetics	
PSO1:	Analyze nutrients and food quality.
PSO2:	Disease management using diet therapy.
PSO3:	Formulate environment friendly innovative food products.
PSO4:	Devise research strategies for empowering and promoting healthy living in the community.
PSO5:	Competent to take up careers in academics, health care and service industry
M.Phil., Food Service Management and Dietetics	
PSO1:	Achieve specialization in thrust areas of Food Service Management and Dietetics.
PSO2:	Disseminate dietary practices to promote Healthy living in a society
PSO3:	Undertake research in the field of Food Service Management and Dietetics
Ph.D., Food Service Management and Dietetics	
PSO1:	Contribute to research, innovation and development of relevant knowledge and practices in Food Service Management and Dietetics
PSO2:	Explore and pursue an unrivalled level of understanding in the field of Food Service Management and Dietetics to help and improve the Society.
PSO3:	Qualify for highest positions in academic and research settings pertaining to the field of Food Service , Nutrition and Dietetics
Food Science and Nutrition	
B.Sc. Food Science and Nutrition	
PSO1:	Understand the role of food and nutrition for the welfare of the community.
PSO2:	Inculcate skill based knowledge on food industry.
PSO3:	Foundation for career opportunities in area of personal and Public Health Nutrition.
PSO4:	Enable to pursue higher education and research in academic and research institutions.
PSO5:	Promote entrepreneurs in the field of food and nutrition.

M.Sc. Food Science and Nutrition	
PSO1:	Excel as Academicians and Research personnel in academic and research institutions.
PSO2:	Develop comprehensive and analytical skills in food industries and health sectors.
PSO3:	Take up professions in community upliftment programmes.
PSO4:	Inculcate insights in public health nutrition for employment in State and Central Government.
PSO5:	Understand the current scenario in the field of personalized nutrition with reference to nutrigenetics and nutrigenomics.
M.Phil. / Ph.D Food Science and Nutrition	
PSO1:	To obtain a critical understanding and the ability to apply theoretical, practical and scientific knowledge
PSO2:	To effectively communicate the basic and current concept of foods and nutrition theories, practical and scientific applications and ethical considerations.
PSO3:	To identify individual, national and global and environmental issues related to food science and nutrition for diverse population.
PSO4:	Tap self-potentials through thorough knowledge and research to enhance skills for self-employment and entrepreneurship
PSO5:	Buttress technological linkages and stakeholder involvement for mutual academic benefits and research pursuits.
PG Diploma Food Science and Nutrition	
PSO1:	To enable proficiency in Public Health Nutrition.
PSO2:	Familiarize with the epidemiology, diseases and community health for all.
PSO3:	Develop competency in developing and executing community nutrition programmes.
PSO4:	Equip candidates to assist or modify existing programmes for effective implementation.
Textiles & Clothing	
B.Sc Textiles & Apparel Designing	
PSO1:	Gain knowledge in textile production and processing
PSO2:	Acquire dexterity in fashion illustration, designing and garment construction
PSO3:	Develop entrepreneurial skills in textiles and fashion
PSO4:	Understand advance textile fabrication techniques
PSO5:	Develop problem solving abilities in the areas of fashion designing, merchandising, textile testing and quality control
PSO6:	Apply knowledge to introduce sustainable practices in the textile and apparel industry

B. Voc Textile Dyeing and Printing	
PSO1: PSO2: PSO3: PSO4: PSO5:	Identify appropriate textile dyeing and printing process Apply relevant knowledge and skills in textile dyeing and printing techniques Design and develop eco-friendly dyed and printed fabrics Determine the quality of dyed and printed fabrics Perceive appropriate skills for employment and entrepreneurship in textile dyeing and printing units
M.Sc Textiles & Fashion Apparel	
PSO1: PSO2: PSO3: PSO4: PSO5:	Gain expertise in areas of fashion designing and merchandising Obtain experience in advance textile fabrication techniques. Proficient in textile testing and quality control methods Undertake need based multidisciplinary research in technical textiles Develop eco textile processing methods
M.Sc Bio Textiles	
PSO1: PSO2: PSO3: PSO4: PSO5:	Understand the utilization of eco-friendly materials in textile production Gain expertise in the areas of fashion, designing and merchandising Undertake need based interdisciplinary research in eco-friendly textile processing Comprehend textile testing and effluent treatment methods Develop eco-friendly textile products
M.Phil Textiles and Clothing	
PSO1: PSO2: PSO3:	Comprehend the methods in textile and garment production. Recognize the need for bio-textile research. Apply environment friendly techniques in textile production and processing.
Ph.D Textiles and Clothing	
PSO1: PSO2: PSO3:	Comprehend and describe the advances in textiles and clothing. Analyze the prospects for interdisciplinary research processes. Design and create technical textile products with natural underutilized resources.
Human Development	
B.Sc Human Development	
PSO1: PSO2: PSO3: PSO4: PSO5:	Describe how individuals develop and change from conception to old age and identify how families and communities influence the process of growth and development Relate the knowledge of principles of human development with self, family and society Apply methods of teaching and training of early childhood care, education, development and administration of early learning centers To appraise life situations and identify the individuals in need of special care and protection and suggest suitable referral services To manage the crisis in each stage of human life cycle for the betterment of their own life and people around them

M.Sc Human Development	
PSO1:	Abreast with recent advances in the field of Human Development Appreciate the interactionary effects of genes and environment in life span development
PSO2:	Demonstrate the skills in using tools to assess human development and behaviour, teaching, counselling, marriage and family therapy, social work, law, legislation/human rights and life skills
PSO3:	Develop, implement and evaluate framework and interventions for early developmental delays to improve physical, cognitive and psycho-social wellbeing of people
PSO4:	To advocate domain specific programmes for the welfare of the society and to become policy makers
PSO5:	Establishing centers for human welfare – crèche, early learning centers, guidance and counselling centers, foster cares, day care centers for both children and elderly citizens.
M.Phil Human Development	
PSO1:	Ability to apply knowledge of human development and behavior in research across life span.
PSO2:	Review theoretical perspective of development and behavior and relate it to contemporary research in today's context
PSO3:	Quantify quality of life, happiness and wellbeing of community in the context of Human Development Index and undertake action research, review policy in the current scenario of the nation.
Ph.D Human Development	
PSO1:	Ability to apply knowledge of human development and behavior in research across life span.
PSO2:	Application of theories to research in learning and behavioural challenges throughout life span development
PSO3:	Appraise and promote quality of life, happiness and wellbeing of community in the context of Human Development Index and embark on action and applied research and review policy in context with the current scenario of the nation.
Home Science Extension Education	
B.Sc. Rural Development and Sociology	
PSO1:	Acquire knowledge, skill and attitude to work with the communities
PSO2:	Get sensitised on the nature, infrastructure strategies and issues of rural and urban societies and focus on the strategies of improvising rural and urban management programmes
PSO3:	Impart life skill oriented training programmes
PSO4:	Facilitate understanding of the government system and structure for empowerment of people.
PSO5:	Acquire knowledge to develop entrepreneurial skills

M.Sc. Extension and Communication	
PSO1:	Aquatint basic facts about rural society
PSO2:	Getting practical exposure on existing rural development programmes, rural governance, PRA and NGO management
PSO3:	Developing skills to mobilize the community participation in development programmes
PSO4:	Train the rural development stakeholders
PSO5:	Make them as a consultant trainer, leader, motivator, effective policy maker and evaluators to undertake various research projects
Master of Social Work	
PSO1:	Acquire scientific knowledge about the fields and emerging areas of social work
PSO2:	Enhance people's capacity for social functioning towards better quality of life Relate the social work concepts and knowledge with individuals, groups and society
PSO3:	Develop the ability to apply skills in social work practice in different fields for achieving desirable change, development and empowerment of people
PSO4:	Provide opportunities for the students to develop their capacities to become HR officer,
PSO5:	Counselors and medical social workers, Project managers and coordinators in NGOs.
M.Phil Extension Education	
PSO1:	Learn the research methods to undertake community based research
PSO2:	Gain knowledge on current trends in Home Science Extension and Rural Development
PSO3:	Master the specialized field of research with upgraded information
Ph.D. Extension Education	
PSO1:	Getting practical exposure on assessing rural development programmes and current research trends in extension
PSO2:	Developing skills to work with the community in development programmes
PSO3:	Critical analysis of existing developmental programmes
PSO4:	Make them as a consultant trainer, effective policy researcher and evaluator to undertake various research projects
PSO5:	Applying scientific knowledge in the conduct of systematic research on Home Science Extension Education
Women's Studies Centre	
Co-curricular course on Gender and Empowerment	
Paper – I Women Empowerment Perspectives	
PSO1:	Learn the conceptual understanding of women intellectualism, interests, academics, career and changing trends of women's development.
PSO2:	Learn the leadership skills and legal rights for women.
PSO3:	Know the policies for women welfare.
Paper – II Introduction to Gender and Social concerns	
PSO1:	Know the concept of Gender Sensitization.
PSO2:	Understand the status of women in the family and society.
PSO3:	Understand the social problems encountered by women

Co-Curricular course on Gender, Technical Education and Employment	
Paper – I Introduction to Gender Disparities in Technical Education	
PSO1: PSO2: PSO3:	Know the conceptual understanding of gender sensitization. Understand the professional status of women and gender differences in leadership style and management skill. Learn the policies / programmes for women empowerment.
Paper – II Women Empowerment Perspectives in the Current Scenario	
PSO1: PSO2: PSO3:	Understand the changing trends of women's development. Know the social and National Obligation of Technically qualified women and building leadership skills. Learn the Entrepreneurship and role of entrepreneurs in the growing economy.
Co-curricular course on Gender and Education	
Paper – I Gender and Education	
PSO1: PSO2: PSO3:	Understand the concept Gender Sensitization and significance of girls education. Know the Gender difference in Education and Employment. Learn the Government policies and programmes to encourage women's education and employment.
M.Phil. Women's Studies	
PSO1: PSO2: PSO3:	Understanding on different feminist theories and methodology Raise awareness on women's participation and perspectives on different social issues Understanding and applying the feminist research
Ph.D. Women's Studies	
PSO1: PSO2: PSO3:	Conceptual understanding of feminist theories Examining the feminist methodology Understanding the social construct of gender

School of Physical Sciences & Computational Sciences

Department of Mathematics	
B.Sc	
PSO1:	Attain basic knowledge in Mathematics and Statistics.
PSO2:	Efficacy to comprehend the technological advancements.
PSO3:	Competency to meet global challenges through critical, rational, analytical and logical thinking.
PSO4:	Proficient in entrepreneurship and leadership qualities.
PSO5:	Capable to work in diverse fields individually or as a team.
M.Sc	
PSO1:	Attain sound knowledge in Mathematics.
PSO2:	Capable to excel in research in the field of Mathematics at global level.
PSO3:	Students will be able to apply Mathematical methodologies to open -ended real -world situations.
PSO4:	Competent to obtain employment in various sectors.
PS05:	Comprehend the usage of technical advancements.
M.Phil	
PSO1:	Acquire knowledge on latest topics of mathematics
PSO2:	Apply the knowledge of mathematics in all the fields of learning
PSO3:	Attain research level linking
PhD	
PSO1:	Acquire knowledge on latest topics of mathematics
PSO2:	Identify and formulate research problems in the thrust areas
PSO3:	Expertise on writing thesis
Department of Physics	
B.Sc	
PSO1:	Understand the core concept of Physics subjects
PSO2:	Acquire analytical and logical skill for higher Education.
PSO3:	Excel in Experimental and Theoretical Physics.
PSO4:	Trained to take up jobs in allied fields.
PSO5:	Confident to take up competitive exams
M.Sc	
PSO1:	Acquire advanced knowledge in both theoretical and experimental Physics
PSO2:	Develop skill of conducting systematic experiments
PSO3:	Apply critical thinking in the concepts of Physics
PSO4:	Trained to appear for qualifying examinations in teaching and research
PS05:	Become a successful entrepreneur and pursue higher education

M.Phil	
PSO1:	A comprehensive understanding of analytical techniques and a knowledge of the literature, applicable to the field of research
PSO2:	Identify and design the research problem in the chosen field of research
PSO3:	Demonstrate originality in the application of knowledge in interpreting the research findings
PSO4:	Communicate the findings to scientific community
PS05:	Demonstrate a mastery of skills and knowledge at a level required for college and undergraduate teaching.
Ph. D	
PSO1:	Identify and formulate the research problem
PSO2:	Critically evaluate current research, research techniques and methodologies
PSO3:	Critically analyze and interpret the outcome of research
PSO4:	Act autonomously to plan and implement a research problem
PSO5:	Develop oral presentation, scientific writing skills and knowledge on IPR.
Department of Chemistry	
B.Sc	
PSO1:	In depth knowledge in fundamentals of chemistry and effective skills to analyze and solve problems in Chemistry (comprehension)
PSO2:	Effective experimental/ statistical skills/ICT skills
PSO3:	Ability to qualify for competitive and service commission examinations
PSO4:	Continuous progress in professional career through practice of lifelong learning
PSO5:	Environmental and socio economic awareness
M.Sc	
PSO1:	Firm foundation in fundamentals and in-depth knowledge in Chemistry
PSO2:	Ability to synthesize, evaluate, classify, interpret and utilize principles, phenomena, processes and reaction mechanisms involved in the various domains of Chemistry
PSO3:	Capability to make use of modern instrumentation, technology and online searching tools to obtain information about chemicals, chemical techniques and models and any aspect related to Chemistry
PSO4:	Depth of knowledge to qualify for National level examinations and to acquire research aptitude
PSO5:	Sensitivity to sustainable environmental practices and socio economic awareness
M.Phil	
PSO1:	Ability to choose research problem and familiarity to methodology of research
PSO2:	Interpretation of results of research
PSO3:	Developing specialized research skills and dissemination of research
Ph. D	
PSO1:	Ability to choose a research problem and proceed in the methodical way and dissemination of research
PSO2:	Contribution to research and development with societal impact
PSO3:	Ability to frame project proposals and apply for funding

Department of Computer Science	
B.Sc	
PSO1: PSO2: PSO3: PSO4: PSO5:	Acquire adequate knowledge in core areas. Possess skill sets in programming. Exhibit a range of transferable skills for employment. Groom themselves to be future technocrats. Imbibe societal responsibilities.
BCA	
PSO1: PSO2: PSO3: PSO4: PSO5:	Gain knowledge and skill sets in applying core concepts. Analyze current and future trends to solve problems. Competent for Higher Education, IT and ITES. Develop with societal responsibility. Employability readiness in various sectors.
M.Sc	
PSO1: PSO2: PSO3: PSO4: PSO5:	Apply technology to solve problems. Develop inter-disciplinary and multi-disciplinary domain skills. Obtain core knowledge for higher Education. Develop global standards competencies. Possess leadership skills.
MCA	
PSO1: PSO2: PSO3: PSO4: PSO5:	Applying theoretical concepts for real world problems. Develop skills in various domains. Inculcate skills for team work. Providing computing solutions at par with global standards. Promote continuous learning and innovation in research.
PG Diploma	
PSO1: PSO2: PSO3: PSO4: PSO5:	Acquire depth knowledge in Artificial Intelligence Explore Artificial Intelligence in various domains Familiarize Artificial Intelligence applications in real world problems Gain technical knowledge in Artificial Intelligence tools and software Solve problems and develop products in Artificial Intelligence
M.Phil	
PSO1: PSO2: PSO3:	Acquire domain knowledge in the specific areas of Computer Science. Understanding of Research Methodologies and ability to apply them. Documentation and presentation of the findings.
PhD	
PSO1: PSO2: PSO3:	Ability to identify the Fundamental and Applied Research problems in Computer Science. Ability to solve the problem using Tools and latest Technologies. Application of the gained knowledge and research outcome to meet the needs of the society and industry.

Department of Information Technology	
B.Sc	
PSO1:	Enables student to become IT Professional with the skill of Planning, Analysing, Designing, Developing, Implementing, and Testing.
PSO2:	Acquire superior knowledge in the areas of Programming languages, Web technologies, Databases and Multimedia.
PSO3:	Emerge as an Entrepreneur with the ability to provide software based solutions to the requisite problem.
PSO4:	Able to pursue Post graduate with good knowledge in core areas of Information Technology.
PSO5:	Inculcate Communication and team work skills needed for successful professional career.
M.Sc	
PSO1:	Train the students to Plan, Analyze, Design, Develop, Implement, and Test software based problems in the fields of Information Technology.
PSO2:	Emerge as a Developer with a deep understanding and superior IT knowledge in the areas of Programming languages, Web technologies, Open Source Technologies and Analytics.
PSO3:	Enables student to become Specialist in Data Analysis, Data Science, Image processing, Cloud Computing, Network security and Internet of Things.
PSO4:	Emanate as an Entrepreneur with skill to develop the required software.
PSO5:	Emerge as Researcher with Creative, Technical and Problem Solving Skills

School of Bio-Sciences

Department of Botany	
B.Sc	
PSO1:	Knowledge of plants through the study of the diversity of plants.
PSO2:	Understand the core concepts of Botany, the nature of science and its application to everyday problems and significant botanical achievements
PSO3:	Obtain technical skills like dissection of plants from lower to higher forms, identification of plants and field study of flora
PSO4:	Knowledge on Mushroom cultivation, Organic farming , Herbal cosmetics, Medicinal plants facilitating more employment opportunities
PSO5:	Acquires theoretical knowledge on basic concepts of microbes, plant structure, its function and evolution
M.Sc	
PSO1:	In-depth knowledge of lower to higher plants - Algae, Fungi, Bryophytes, Pteridophytes, Gymnosperms, Paleobotany and Angiosperms.
PSO2:	Practical training in microbial culture techniques, composting techniques, biochemical tests and isolation of secondary metabolites.
PSO3:	Training and practical knowledge in the preparation of herbarium, quantifying biomolecules and other basic techniques.
PSO4:	Updation of the students with modern trends in Plant biology and to introduce the interdisciplinary approach.
PS05:	Imparts quality education to meet the demands of higher education and Research in Botany.
M. Phil	
PSO1:	Demonstrate proficiency in basic science and fundamental principles to research approaches.
PSO2:	Demonstrate understanding of advance techniques in biotechnology and interrelated research.
PSO3:	Practical knowledge on biochemical, phytochemical analysis and nanobiology.
Ph. D	
PSO1:	Apply the process of science by identifying testable scientific questions, formulating hypotheses and designing basic experiments using appropriate research methods.
PSO2:	Demonstrate the practical and theoretical knowledge of biotechnology and acquire Skills in laboratory technique.
PSO3:	Imparts quality education to meet the market demands on organic products**.**
	Department of Zoology
B.Sc.	
PSO1:	Have a comprehensive knowledge of Zoology and its relationship with other fields of biology.
PSO2:	Able to identify and classify the major groups of animals, compare and contrast anatomical and physiological characteristics of vertebrates and invertebrates.
PSO3:	Explain the functioning of organisms at the level of gene, genome, cell, tissue, organ and

	organ systems.
PSO4:	Explicate the ecological interconnectedness of life on earth and able to relate the physical features of the environment to the population and community structure and ecosystem.
PSO5:	Have a wide knowledge on the principles of animal evolution, geological time scale and paleontology, animal reproduction and development.
M.Sc	
PSO1:	Gain knowledge on animal structure and function relationships, assess the evolution of various organ systems.
PSO2:	Relate normal cellular and molecular structures to their functions.
PSO3:	Understand the concept of a cell and its role in development and formation of an embryo.
PSO4:	Explain cellular processes and mechanisms that lead to physiological functions and pathological state.
PSO5:	Explain the mechanisms which underlie evolution at the molecular level.
M.Phil	
PSO1:	Understand the facts and experimental basis of modern Zoology
PSO2:	Solve the scientific problems in relation to biological process
PSO3:	Demonstrate the principles, mechanism and applications of basic and modern equipments in research laboratory
Ph. D	
PSO1:	Identifying the research problem, find suitable methodology, infer and interpret the findings.
PSO2:	Learn and apply the ethics in animal usage and welfare
PSO3:	Enhance the ability of writing thesis and research projects
Department of Biochemistry, Biotechnology & Bioinformatics	
B.Sc Biochemistry & Biotechnology	
PSO1:	The double- major conceptual framework provides a strong foundation in Biochemistry and Biotechnology, building a holistic expertise and providing an edge in facing the National-level competitive examinations
PSO2:	The Programme enables the students to find opportunities for higher studies in reputed academic and research Institutions
PSO3:	The Programme inculcates critical thinking and analytical skills, which increases their marketability
PSO4:	Internships and field visits give a strong exposure to real time research problems in life science and enable the graduates to launch them in their workplace environment
M.Sc Biochemistry	
PSO1:	Apply the knowledge and skills acquired to undertake a career in all fields related to biosciences.
PSO2:	Gain in-depth knowledge in the domains of Cell biology, Intermediary metabolism, Diagnostic Biochemistry, Pharmaceutical and Hormonal Biochemistry, Genetics, Nutritional Biochemistry, Genetic engineering and Neurochemistry.
PSO3:	Obtain hands on training in laboratory techniques related to Biophysics, Analytical biochemistry, Clinical biochemistry, Microbiology, Molecular biology, bioinformatics, Immunology, Plant and Animal Tissue Culture and Enzymology.

PSO4:	Understand the importance of bioethics, biosafety and IPR and translate experimental knowledge to design research proposals through mini-projects and dissertations to address societal and community needs.
PSO5:	Develop entrepreneurial skills through training in multi-disciplinary fields and internships in research institutes and industries
M.Sc Biotechnology	
PSO1:	Equip themselves with fundamentals and emerging concepts of Biotechnology and its applications in academic, research, pharmaceutics and industries.
PSO2:	Enhance knowledge in the scientific domains of Cell biology, Microbial and Immunotechnology, Genetics, Bioinformatics, Recombinant DNA and Nanotechnology, Plant, Animal, Pharmaceutical, Food and Environmental Biotechnology.
PSO3:	Apply the concepts of life sciences and to acquire technological knowhow and hands-on training in the field.
PSO4:	Recognize the importance of bioethics, biosafety, IPR, entrepreneurship and communication skills, thus providing a strong foundation for both academic / industrial placements as well as setting up entrepreneurial ventures.
PSO5:	Act as independent researchers, planning and executing projects in biotechnology, analyzing and interpreting the data using state-of-the-art techniques and modern tools
B.Sc Bioinformatics	
PSO1:	Gain multi-disciplinary knowledge and practical skills in computational, mathematical and biological sciences for challenging careers in academics, research, biotechnology, pharmaceutical and health care industries.
PSO2:	Enhance knowledge in the scientific domains of Programming languages, Structural bioinformatics, Genomics, Proteomics, Systems biology, Bioethics, Biosafety, IPR, Molecular modeling and Drug discovery
PSO3:	Apply the appropriate programming and analytical skills in big data analysis and make meaningful predictions.
PSO4:	Design new algorithms and *in-silico* interventions to solve industrial and societal problems.
PSO5:	Develop entrepreneurial skills and become professionals in various fields.
M.Phil Biochemistry	
PSO1:	Provide knowledge base as to how to design a research project and about different aspects involved in carrying out research
PSO2:	Student will be able to search, read and understand the applicable primary literature
PSO3:	Ability to identify societal problems and recognize the importance of designing scientifically sound and ethical research to solve societal problems
PhD Biochemistry	
PSO1:	Prepare a scholar to become a good academician, author of necessary papers and able to take minor research projects to become project associate
PSO2:	Formulate societal problems into good quality research questions with optimal utilization of state of the art technologies
PSO3:	Publication of their results from the research work in the peer reviewed journals benefit the society and career in research

M.Phil Biotechnology	
PSO1:	Understand and apply the concepts of Biotechnology to find solutions for emerging challenges.
PSO2:	To understand the techniques used in Biotechnology and Molecular Biology to investigate the biological problems.
Ph.D Biotechnology	
PSO1:	Acquire in-depth knowledge in the basic concepts of biotechnology to strengthen background for academic, research, industrial and pharmaceutical applications.
PSO2:	Recognise the need for the preparation and ability to carry out independent research in broadest context of biotechnological relevance.
PSO3:	Analyse and interpret the data using modern tools in biotechnology and effectively communicate the results to the stakeholders
M.Phil Bioinformatics	
PSO1:	Students will have analytical and scientific facet in the field of research
PSO2:	Students will be able to identify societal problems and recognize the importance of designing scientifically sound and ethical research to solve societal problems
PSO3:	Students will qualify for higher education and industry needs.
Department of Physician Assistant	
B.Sc	
PSO1:	To apply and practice moral and ethical values in day to-day personal and professional life.
PSO2:	To demonstrate effective communication skills when dealing with patients and people at all levels.
PSO3:	To provide diagnostic, therapeutic, rehabilitative and preventive health care services in virtually all medical specialties, as delegated by a physician.
PSO4:	To continue personal and professional growth through ongoing education and self-evaluation.
PSO5:	To make available standard, modern healthcare education to any eligible and deserving individual.

School of Arts and Social Sciences

Department of Economics	
B.A. Economics	
PSO1:	Apprehend the significance of economic theories in practice.
PSO2:	The ability to evaluate historical and current events from an *economic* perspective.
PSO3:	Develop skills for analysing economic data.
PSO4:	To develop informed opinions on policy issues.
PSO5:	Create foundation for facing competitive examination and pursuing lifelong learning.
M.A. Economics	
PSO1:	Have a comprehensive knowledge of economics as an academic discipline.
PSO2:	Ability to analyse current events from economic perspective.
PSO3:	Apply economic theory and quantitative methods to solve economic problems.
PSO4:	Enhance knowledge and skills to undertake research activities.
PS05:	The ability to read and interpret policy issues with dexterity.
M.Phil.	
PSO1:	To appreciate and apprehend the recent development in economic theory.
PSO2:	To develop critical analysis of economic theories to focus on researchable matters.
PSO3:	To apply theories and research techniques/ methods to solve economic issues
Ph.D.,	
PSO1:	Enhance knowledge and skills in developing deeper insights into economic theories and apply them to solve economic problems.
PSO2:	Develop abilities to appreciate data sources and application of research techniques for research.
PSO3:	Develop critical understanding of the research methodology in the selected field
Department of Hindi	
B. A Functional Hindi	
PSO1:	Develop their Communicative & Reading Skills in Hindi
PSO2:	Gain Computational Skills in Hindi
PSO3:	Get practical knowledge & Experience as they go for on the Job Training in Banks/Central Govt. Offices..
PSO4:	Can be placed as Teacher, Reporter & Typist.
PSO5:	Higher Studies can be continued in both Journalism & Literature.
M.A Hindi and Journalism	
PSO1:	Deepens and enlarges the student's mastery of Hindi
PSO2:	Gain practical knowledge through internship
PSO3:	Acquire the skill set to be as Hindi Officer, Lecturer, Journalist, Reporter, Editor Translator & News Reader in Media
PSO4:	Can do research in both Journalism & Literature
PSO5:	Get ability to do projects

M. Phil	
PSO1: PSO2: PSO3:	Develop the knowledge in specific area of literature Expose the Students with various forms of Hindi Literature Women Empowerment through Literature
Ph. D	
PSO1: PSO2: PSO3:	To lay strong foundation to take up research Project and Programmes. Aquire the skill to be placed as Lecturers, Research Guide etc . Learn innovative methods in research.
Department of English	
B. A. English	
PSO1: PSO2: PSO3: PSO4: PSO5:	Knowledge of genres and issues in Literatures in English Proficiency to exercise various language skills through Literature Ability to identify and analyse critical issues in the realms of Literature and Communication Orientation towards global, national and regional cultures through literature Enriched professional competency in English
M.A English	
PSO1: PSO2: PSO3: PSO4: PSO5:	Enriched knowledge pertaining to Literatures in English Understanding of the relations between Culture, History and Texts Enhanced ability to explore literary texts from different critical standpoints Expertise in critical skills to pursue full-fledged research in English Acquisition of professional skills for research and teaching
M. Phil	
PSO1: PSO2: PSO3:	Draft Research Design Produce socially relevant Research Able to pursue Ph.D Programme with critical insight and high research perceptive
Ph. D	
PSO1: PSO2 PSO3	Develop and understand the latest Research Methodology and Research trends Have insight into conceptual understanding of the Literary and Critical Theories Apply theories in the analysis of the work of art and Research
Department of Music	
B. A. Music	
PSO1: PSO2: PSO3: PSO4: PSO5:	Gain Knowledge through fundamentals and basic lessons. Acquire awareness about the various types of ragas and talas in Carnatic Music Equip knowledge about the prominent musicians, composers and their contributions towards Carnatic Music. Possess outline knowledge of various types of music like sacred, secular, and folk and so on. Attain thorough knowledge in Music and become entrepreneur and performing artist

M. A. Music	
PSO1:	Gain knowledge on the intricacies of gamakas and nuances of ragas and raga sancharas.
PSO2:	Attain knowledge in voice culture , modulation of voice and selection of songs to resent stage performance.
PSO3:	Access to develop creative music such as raga alapana,niraval and Kalpana swaras
PSO4:	Expertise in rendering various musical compositions in major ragas and rare ragas of eminent composers.
PSO5:	Become a successful entrepreneur, professional and pursue higher education
M. Phil	
PSO1:	To enable the students to do research work and to understand the importance of research.
PSO2:	To do analytical study in various musical aspects
PSO3:	To know the demonstrating method of Musical Compositions.
Ph. D	
PSO1:	To gain the knowledge of Research Methodology.
PSO2:	To acquire knowledge to collect the required materials.
PSO3:	To obtain knowledge to propagate the findings and outcome of the Thesis for the welfare of the society.
Department of Psychology	
B. Sc Psychology	
PSO1:	The understanding of the nature and historical development of Psychology as a Social Science
PSO2:	Appreciating and empathizing the psychological complexities of real life problems
PSO3:	Preparing and planning to apply the knowledge of Psychology for professional growth
PSO4:	Usage of technology for studying latest concepts, advancements and interventions in Psychology
PSO5:	Applications of basic research and statistics
M.Sc Applied Psychology	
PSO1:	The understanding of the nature and historical development of Psychology as a Social Science.
PSO2:	Application of psychological techniques to address social and personal issues.
PSO3:	Advanced competency in the statistical analysis and interpretation of empirical research findings.
PSO4:	Usage of standardized assessment tools to asses psychological functioning of an individual.
PSO5:	To impress upon the ethicality in the principles and applications in Psychology.

M.Phil	
PSO1: PSO2: PSO3:	To Navigate the Scholars into the Process of Successful Counselling. To apply Research and Statistics in the field of Counselling. To utilize the theories in the interventional practices as well as in Counselling.
Ph.D	
PSO1: PSO2: PSO3:	To apply the Research Skills acquired for various Societal Life Problems. To utilize Statistical tools as a means to achieve empirical verification in real life settings. To guide new Scholars in various fields of Psychological Research.
Department of Visual Communication	
B.Sc Visual Communication	
PSO1: PSO2: PSO3: PSO4: PSO5:	Understand the fundamentals in the development and functioning of various media organisations. Develop creative and technical skills for media content production. Become eligible and qualified media professionals and entrepreneurs Develop analytical and critical thinking of the social happenings and elevate as a social and culture oriented citizens Empowered for quality placement in media industry
Department of Sanskrit	
B. A. Sanskrit	
PSO1: PSO2: PSO3: PSO4: PSO5:	Develop vocabulary and reading skills in Sanskrit. To know the salient features of Indian cultural heritage preserved in Sanskrit. Expose the students with various forms of Sanskrit literature. To lay strong foundation to take up postgraduate and research programmes. To acquire the skill to be placed as Acharyas, Archeologist, Teachers, Translators, Astrologer, Linguist.

School of Commerce & Management

Department of Commerce	
B. Com	
PSO1:	Preparing business leaders and entrepreneurs
PSO2:	Acquisition of analytical skills and communicative skills
PSO3:	Opportunities to enter into the professional courses in accounting and taxation
PSO4:	Develop team spirit and the inter-personal skills
PSO5:	Ensuring gainful employment in financial institutes, government undertakings, stock broking and audit firms
B. Com (Professional Accounting)	
PSO1:	Enhances employability in industries and business organizations
PSO2:	Acquire analytical skills and legal aspects of business activities
PSO3:	Competency to develop professional skills and capabilities
PSO4:	Well versed in use of accounting software
PSO5:	Acquire in depth knowledge on business skills and corporate social responsibilities
B. Com (Computer Applications)	
PSO1:	Enhance the technical and computational skill to execute the real-time projects and research.
PSO2:	Acquire analytical and leadership skills to carry out the business activities.
PSO3:	Obtain problem solving skill to the real-scenario.
PSO4:	Ensure gainful career opportunities in IT and service sector.
PSO5:	Pursue higher studies in commerce and computer applications.
M. Com	
PSO1:	Develop academic professionals
PSO2:	Enrich research aptitude
PSO3:	Acquire knowledge on global business
PSO4:	Acquire computational skills
PSO5:	Career in government and private sector
M. Com (Computer Applications)	
PSO1:	Develop academic professionals
PSO2:	Enrich research aptitude
PSO3:	Acquire knowledge on global business
PSO4:	Acquire computational skills
PSO5:	Career in government and private sector
M. Phil	
PSO1:	Enrichment of knowledge in the field of Commerce and Management
PSO2:	Gaining knowledge in the respective area of specialization
PSO3:	Preparing the candidates for faculty position in academic and research institutes
Ph. D	
PSO1:	Updating knowledge in the field of social science research
PSO2:	Gaining knowledge in the respective area of specialization
PSO3:	Preparing the candidates for faculty position in academic, research institutes and corporate sectors

Department of Business Administration	
MBA	
PSO1:	Demonstrate knowledge of the environment, functions and processes of contemporary businesses at local and global levels.
PSO2:	Exhibit critical thinking and managerial competencies through effective communication, team work, problem solving, decision making, ICT and project management skills.
PSO3:	Lead with responsibility and accountability in areas related to governance, environment, sustainability with Indian ethos and values.
PSO4:	Create innovative systems and best practices in their specific areas of work that are replicable and feasible.
PSO5:	Emerge as entrepreneur/ intrapreneur leveraging on opportunities with relevant traits of a visionary leader.
MBA (IT)	
PSO1:	Demonstrate comprehensive knowledge of business functions, processes and policies related to IT management.
PSO2:	Source out and mine complex information and design business processes and customized business models through critical thinking and problem solving.
PSO3:	Demonstrate ethics and values in all areas such as IT governance and sustainable practices.
PSO4:	Apply IT and adopt global cross cultural practices to convert them into self sustaining businesses.
PSO5:	Emerge as socially responsible entrepreneur/intrapreneur with far-sightedness.
M. Phil	
PSO1:	Development of Research Aptitude and expertise in the field of Business and Management with knowledge in data analytical tools.
PSO2:	Application of research knowledge to give solution to real-time business problems.
PSO3:	Publication of research papers in leading management journals and secure placements as faculty position in leading B Schools
Ph.D.,	
PSO1:	Solve research problems independently and synthesise practical applications which contribute to the creation of original theory.
PSO2:	Organise and Carryout Complex tasks in the field of research and contribute for the society needs.
PSO3:	Initiate and engage in ground breaking thinking and innovation.
Department of Tourism Management	
BBA Tourism	
PSO1:	Knowledge on concepts and phenomenon of Travel and Tourism Industry
PSO2:	Exposure on heritage, nature, rural and adventure tourism
PSO3:	Develop professional behavior and competencies through continuous Industry Institute training & activities
PSO4:	Equip students to face contemporary challenges in the Travel & Hospitality field
PSO5**:**	Empowered with Wholesome development for Quality Placement

MBA Tourism & Travel Management	
PSO1:	Comprehensive knowledge of industry to become a successful tourism professional or entrepreneur
PSO2:	Enable to face contemporary challenges of Tourism profession
PSO3:	Perceive global opportunities and develop business strategies
PSO4:	Inculcate leadership, communication and team spirit shaping into industry ready candidates
PSO5:	Salubrious growth by experiential learning of Indian bio Diversity, Heritage, Cuisine & Adventure
M.Phil Tourism Management	
PSO1:	Enable to address contemporary challenges of Tourism industry through research and innovation
PSO2:	Perceive opportunities to compare regional and global pursuits
PSO3:	Inculcate leadership, communication, analysis and report writing and develop teaching and research skills in the respective specialization area
Ph.D Tourism Management	
PSO1:	Exhaustive review of existing literature and understanding research gap in the field of Tourism and allied sectors.
PSO2:	Pursue Tourism practices at all levels and understand contemporary challenges in meeting societal requirements.
PSO3:	Offer outcome of research as a model of solution and measures for an advanced strategy balancing societal and industrial development.

School of Education

Department of Education	
B.Ed.	
PSO1:	Apply the philosophical, psychological, sociological and pedagogical knowledge for the enhancement of teaching- learning process
PSO2:	Innovate new teaching learning resources to meet the changing needs of the society
PSO3:	Emerge as a /an inspiring teacher, entrepreneur, able administrator and value based social leader
PSO4:	Enhance the functional skills of the future citizens in the classroom
PSO5:	Develop as a societal leader to take the upper hand to establish a welfare society
M.Ed.	
PSO1:	Apply the knowledge of Philosophy, Psychology, Sociology, Administration and Technology for the enhancement of Teacher Education Programme
PSO2:	Emerge as a scientific researcher to meet the diverse need of the society
PSO3:	Evolve as a/an able and inspiring teacher educator, entrepreneur and moulder of value based inspiring teacher
PSO4:	Apply the innovations obtained out of research in the field of education
PS05:	Engage in independent and lifelong learning in the broadest context of technological change
Ph. D	
PSO1:	Design and conduct original research in their area of specialization
PSO2:	Have skills to critically examine the background literature relevant to their specific research area and a comprehensive understanding of scientific methods and techniques applicable to their own research
PSO3:	Demonstrate the ability to communicate the results of their research in a clear and effective manner.
	Department of Special Education
B.Sc. Special Education & Mathematics	
PSO1:	Screen and identify children with sensory and neuro motor disabilities
PSO2:	Analyze the characteristics of children with sensory and neuro motor disabilities
PSO3:	Gain knowledge in framing Individualized group instruction strategy for children with sensory and neuro motor disabilities
PSO4:	Understand the modalities appropriate to meet the needs of children with special needs
PSO5:	Creation of accessible, adaptive and affordable facilities for equal participation of persons with special needs
PSO6:	Advocate for the differently abled to access total rehabilitation

B.Ed. Special Education (Visual Impairment/Hearing Impairment)	
PSO1:	Apply the philosophical, psychological, sociological and pedagogical knowledge for the enhancement of teaching- learning process
PSO2:	Innovate new teaching learning resources to meet the needs of the children with visual/hearing impairment
PSO3:	Emerge as a /an inspiring teacher, special educator, entrepreneur, able administrator and value based social leader
PSO4:	Enhance the functional skills of the future citizens in the inclusive classroom
PSO5:	Develop as a societal leader to take the upper hand to establish a welfare society for the persons with disabilities
M.Ed. Special Education(Visual Impairment/Hearing Impairment)	
PSO1:	Apply the knowledge of Philosophy, Psychology, Sociology, Administration and Technology for the enhancement of General/Special Teacher Education Programme
PSO2:	Emerge as a scientific researcher to meet the diverse need of the children with visual/hearing impairment.
PSO3:	Evolve as a/an able and inspiring teacher educator in special education, entrepreneur and moulder of value based inspiring teacher
PSO4:	Apply the innovations obtained out of research in the field of education and special education
PSO5:	Engage in independent and lifelong learning in the broadest context of technological change in promotion of education of the children with visual/hearing impairment
Ph. D	
PSO1:	Emerge as a scientific researcher to meet the diverse needs of the children with visual/hearing impairment.
PSO2:	Engage in independent and lifelong learning in the broadest context of technological change in promotion of education of the children with visual/hearing impairment
PSO3:	Apply the innovations obtained out of research in the field of education and special education
B.Sc. Physical Education	
PSO1:	Empowered to participate in sports and games and understand how this influences physical well – being by demonstrating the benefits of an active life style through sports, dance, exercise, recreation and adventure pursuits.
PSO2:	Provides a solid foundation for higher education, research in physical education related studies and also provides a roadmap to cultivate entrepreneur skills.
PSO3:	Organize, implement, monitor, assess and evaluate safe, sound and sequential Physical education programme that accomplish the need of students.
PSO4:	Enhance basic scientific, technical knowledge and rules of various sports and games towards physical education programme.
PSO5:	Develop teamwork, leadership and interpersonal skills in the professional setup.

B.P.Ed.	
PSO1:	Demonstrate an understanding of physical education content and disciplinary concepts related to the development of physical, physiological, psychological, sociological, nutritional, technological and scientific contribution for better health, performance and well being.
PSO2:	Identify historical, philosophical, and social perspectives of physical education issues related to research based practices decisive to educational processes.
PSO3:	Identify, analyze and demonstrate the motor skill, rules and insights related to indigenous and combative activities, sports and games to encourage and grow professionally to develop a strong sense of personal and professional integrity.
PSO4:	Organize, implement, monitor, assess and evaluate safe, sound and sequential physical education programmes that addresses to the diverse needs of all students.
PSO5:	Practice professional skills, life skills and ethical teaching standards to gratify the demands of the community.
M. Phil	
PSO1:	Learning the importance of professional and intellectual integrity, ethics of research and scholarship and understanding the responsibility to contribute to the community for the sustainable development of the society.
PSO2:	Apply the scientific context to develop innovative ideas in Physical Education and Sports for the benefits of humanity towards health and performance.
PSO3:	Analyzing the influence of Science and Technology rooted in the minds of 20th century Physical Educationist and sportsmen.
Ph. D	
PSO1:	Approach for solving research problems by systematic understanding and identifying the globalized issues and its impact on Physical Education and Sports.
PSO2:	Motivate the researcher to create an interest in planning and implementing of research ideas to the society.
PSO3:	Fostering motivational attitude to the physical education healthy lifestyle and regular exercising to procure physical culture.

School of Engineering

Department of Biomedical Instrumentation Engineering	
B.E. Biomedical Instrumentation Engineering	
PSO1:	Create engineers who can work in the field of Image Processing, Sensors & Actuators, Biomedical Instruments, Communication, MEMS and allied fields to develop innovative biomedical system for the public wellness and safety.
PSO2:	Develop skills for design, maintenance and testing of medical equipment.
M.E. Medical Electronics	
PSO1:	Achieve expertise in Signal Processing, Optimization techniques, Medical Imaging, Biological control systems and applications to Bio-Sciences.
B.Voc.Medical Equipment technology	
PSO1:	Ability to ensure that medical equipment is well maintained and safely functional.
PSO2:	Follow safety codes and standards, troubleshoot faulty device and achieve appropriate skills for employment.
Department of Computer Science and Engineering	
B.E. Computer Science and Engineering	
PSO1:	The graduates in Computer Science and Engineering will be able to Analyse and develop computer programs in the areas related to algorithms, database, web design, data mining, information security, cloud computing and networking for efficient design of computer –based systems of varying complexity
PSO2:	Gain knowledge in diverse areas of Computer Science and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.
B.E. Artificial Intelligence and Data Science	
PSO1:	The graduates in AI & DS will be able to Apply the concepts learnt through courses like Data Structures, Data Mining, Cloud Computing, Machine Learning, Data Science, Computer Vision, Data Visualization and programming languages to solve real life problems
PSO2:	Acquaint with the contemporary trends in industries and thereby innovate novel solutions to existing problems
M.E. Computer Science and Engineering	
PSO1:	The graduates in Computer Science and Engineering will be able to Design and implement solutions for rapidly changing computing problems which meet the desired needs of industry and society
PSO2:	Take-up Research & Development and Entrepreneurships in modern computing environment
Ph.D . Computer Science and Engineering	
PSO1:	The graduates in Computer Science and Engineering will be able to, Use research based knowledge and research methodologies to provide valid solutions to complex problems
PSO2:	Acquire sound knowledge base and skill sets to develop professional careers in the field of

PSO3:	specialisation Apply domain knowledge and expertise in Computer Science and Engineering for enhancing lifelong research learning capability to transform innovative ideas to reality
Department of Civil Engineering	
B.E. Civil Engineering	
PSO1 PSO2	Equip in planning, analysis, design, execution, quality control of Civil Engineering projects through modern Civil Engineering software tools Apply green concepts in the area of construction materials & techniques, Environmental Engineering, and Soil Mechanics
Ph. D Civil Engineering	
PSO1 PSO2	Equip in planning, analysis, design, execution, quality control of Civil Engineering projects through modern Civil Engineering software tools Apply green concepts in the area of construction materials & techniques, Environmental Engineering, and Soil Mechanics
Department of Electronics and Communication Engineering	
B.E. Electronics and Communication Engineering	
PSO1: **PSO2:**	Design and implement electronic systems for real time applications through expertise gained in communication systems, signal processing, VLSI and Embedded systems Analyse and solve complex Electronics and Communication Engineering problems, using modern hardware and software tools either independently or in a team.
M.E.VLSI Design	
PSO1: **PSO2:**	Design VLSI circuits to optimize power and area requirement, free from faults and dependencies by modeling simulation and testing. Apply advanced concepts of VLSI in providing optimized solutions to industrial and socio- commercial problems.
M.Tech Internet of Things	
PSO1:	A graduate of Integrated M. E. Internet of Things will have the ability to: The Programme is designed to impart necessary theoretical and practical knowledge of various components of Internet of Things and to enable post- graduates to pursue research.
Department of Printing Technology	
B.E. Printing Technology	
PSO1: PSO2:	To facilitate students with technology, along hands-on experience in print and allied skill that will enable them to enter any vertical of Print-Pack Industry To provide students with engineering experience side by side with human values, environmental and societal concerns.
Department of Food Processing and Preservation Technology	
B.E. Food Processing and Preservation Technology	
PSO1	Apply Appropriate technologies to develop innovations and safe food products Promote Graduates for a prospective career and pursue Higher Education
M.E Food Technology	
PSO1	Apply Appropriate technologies to develop innovations and safe food products Promote Graduates for a propective career and pursue Higher Education

B.Voc.Food Processing and Engineering	
PSO 1: PSO 2:	Apply appropriate technologies to develop innovations and safe food products. Promote graduates for prospective career and pursue higher education.
Ph. D	
PSO 1: PSO 2:	Apply Appropriate technologies to develop innovations and safe food products Promote Graduates for a prospective career and pursue Higher Education

School of Home Science

Course Outcomes of Courses offered in UG/PG Programmes

Department of Resource Management

B.Sc., Interior Design and Resource Management			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BIDC01	Interior Design and the Visual Art	1. Interpret, draw, analyze and evaluate designs for their functionality 2. Distinguish designs of functional value from those of aesthetic value 3. Comprehend significance of design concepts as an integral component of man's living styles from bygone days 4. Appreciate role of designs in various contexts, cultures and ethnic influences and apply visual elements and principles in designing interiors 5. Customize/ optimize use of visual arts, accessories and antiques for designing interiors and other aspects
2.	18BIDC02	Colour and Lighting	1. Recognize Color and light as essential qualities in the physical world 2. Introduce Color in all art forms 3. Design and solve complex colour and lighting problems using the principles learnt 4. Apply color and light in various functional contexts 5. Appraise recent trends in the usage of color and lighting in interiors
3.	18BIDC03	Studio I - Design Applications in Art	1. Use and apply various elements and principles on two dimensional and 3 dimensional compositions 2. Develop designs suitable for various applications 3. Practice various techniques in creating art 4. Derive inspiration from natural sources of design and use in functional contexts 5. Critically analyse designs of existing man-made objects
4.	18BIDC04	Furnishings in Interiors	1. Understand the composition, construction, and finishes applied on fabrics for furnishings. 2. Analyse recent trends in furnishings 3. Gather information on various household linen, their selection and care. 4. Adopt various window treatments in interiors.

			5. Calculate the cost of furnishing a house.
5.	18BIDC05	Management for Modern Living	1. Adopt efficient homemaking skills with good managerial potentials 2. Practice values, identify goals and set standards in day-to-day living 3. Handle all situations in the family and apply decision making skills 4. Identify human and non-human resources for efficient management of the family 5. Face challenges put forth by recent trends in availability of resources
6.	18BIDC06	Floriculture- Design and Merchandising	1. Do floral arrangements based on principles and elements of design 2. Classify flowering and ornamental plants. 3. Follow the steps in storing and handling of flowers to retain freshness 4. Make different types of floral arrangements. 5. Explore possibilities of a career in the retail flower business
7.	18BIDC07	Landscape Designing-Concept and Principles	1. Identify and characterise the historical context of professional landscape architecture 2. Create, analyze and evaluate three dimensional landscape designs effectively and critically. 3. Explore and analyze planting solutions for different types of garden 4. Possess knowledge and understanding about efficient landscaping 5. Apply practical knowledge constructively in the field of landscaping
8.	18BIDC08	Furniture in Interiors	1. Identify and select furniture for different areas of a residence 2. Analyse the furniture for the process involved, joints, joineries used and finishes applied in furniture construction 3. Differentiate or interpret the styles in furniture 4. Analyse the trends in furniture usage 5. Care and maintain furniture used in a given area.
9.	18BIDC09	Principles of Housekeeping	1. Appraise the role of housekeeping in various buildings. 2. Identify the housekeeping areas in a building 3. Develop personal abilities in housekeeping to work in commercial establishments. 4. Practice personal grooming and etiquette. 5. Adopt good waste management practices as an efficient housekeeping method.

10.	18BIDC10	Studio II - Principles of Drafting	1. Use drawing instruments and drafting techniques 2. Adopt scale, dimensioning and lettering techniques in presentation drawings 3. Draw orthographic and isometric drawings 4. Exhibit drafting skills to express design ideas 5. Draft perspective projections using different methods
11.	18BIDC11	Building Materials and Finishes	1. Identify and select proper construction materials and finishes for building construction 2. Demonstrate knowledge of properties of various building materials 3. Describe usage and characteristics of building materials and finishes for strength, durability and aesthetics. 4. Explain the components of a building and analyse the availability of materials for building construction 5. Interpret construction materials Vs finishes & interior Vs exterior materials
12.	18BIDC12	Consumer Economics and the Green Consumer	1. Identify the major influences on consumer behavior 2. Analyze the implications of demand and supply. 3. Implement the most appropriate measures to tackle market situations 4. Identify the need for consumer protection and outline the areas covered by consumer protection laws. 5. Appreciate green purchase behaviour and advocate positive attitude towards green products.
13.	18BIDC13	Art in Commercial Space	1. Identify elements needed for appropriate displays. 2. Locate possible problems in putting layouts together and work out ways of sorting them out 3. Create displays that achieve the required visual effect consistent with the company's visual design policy 4. Follow company procedures for safety and security 5. Practice as successful entrepreneurs adopting appreciable display methods.
14.	18BIDC14	StudioIII - CAD for Building Designs	1. Appreciate basic concepts of the AutoCAD software 2. Apply the technique to develop construction drawings

			3. Manipulate drawings through editing and plotting techniques 4. Understand geometric construction and Produce 2D Orthographic Projections 5. Demonstrate dimensioning concepts and techniques in 3D presentation
15.	18BIDC15	Family Resource Management	1. Identify the resources and factors influencing the use of resources. 2. Understand use of tools in time management in day to day life. 3. Apply work simplification techniques while planning work. 4. Develop skills to draw a budget within the available income and to maintain accounts. 5. Manage efficiently the available resources during residence stay.
16.	18BIDC16	Principles of Ergonomics	1. Distinguish the terms referring to health and safety and ergonomics 2. Identify and use ergonomic controls to reduce and prevent work-related disorders 3. Comprehend interrelatedness of work, worker and work environment on productivity 4. Adhere to safety principles during work performance 5. Relate significance of anthropometry to work place designing
17.	18BIDC17	Alternate Sources of Energy	1. Appreciate significance of energy in different forms 2. Practice use of solar device and help in conserving fossil fuel 3. Benefit from the merits of using alternate energy sources 4. Act as prudent consumers in the use of natural energy resources 5. Contribute to the dual goals of conservation of energy resources and reduction of environmental pollution.
18.	18BIDC18	Residential Space Planning	1. Demonstrate knowledge of space designing and its principles 2. Use basic principles of spatial lay out to create well designed residential floor plans 3. Analyze and apply client's needs to create effectively well designed floor plans 4. Understand the factors that influence the buying, building or the renting of houses 5. Identify key issues in housing finance, affordability and technology systems
19.	18BIDC19	Studio IV - 3Ds Max in Interior Design	1. Demonstrate 2- dimensional and 3-dimensional representation of the design

			ideas 2. Practice various types of rendering and visualization skills 3. Understand the fundamental concepts and techniques in 3D modeling 4. Evolve designs using learnt concepts 5. Satisfy client requirements and customize design
20.	18BIDC20	Building Services for Interiors (Self Study)	1. Have a thorough knowledge on building services 2. Critically analyse various safety and security systems in buildings 3. Differentiate systems like mechanical, electric and electronic systems 4. Appraise role of communication systems in modern interiors 5. Comprehend human sensory devices used in interiors
21.	18BIDC23	Applied Arts in Interior Decoration	1. Understand the significance of art and develop good taste among students. 2. Apply art in creating aesthetic interiors. 3. Know art of sculpting and bring aesthetics in interiors using sculptures. 4. Use the art of graphics resulting in creating 2D, 3D pictures for various areas. 5. Enjoy masterpieces of renowned artists for their aesthetic and functional values.
22.	18BIDC24	Waste Management for Health and Wellbeing	1. Identify the sources and classify wastes 2. Manage solid and liquid waste in resourceful manner 3. Advocate safe waste disposal methods 4. Improve their civic responsibilities 5. Address issues related to waste management and find solutions
23.	18 BIDC25	Kitchen Equipment	1. Understand and classify kitchen equipment's under different categories 2. Plan kitchens; calculate the electrical consumption for various equipments. 3. Explain wiring system 4. Select, use, operate and maintain major electrical and non – electrical equipment. 5. Practise wise consumerism
24.	18BIDC26	Basics in Architecture	1. Identify rudiments of architecture and influential factors 2. Compare characteristic features of period style architecture 3. Appreciate influence of materials and methods in development of architecture 4. Adore architectural masterpieces for their uniqueness

			5. Identify and appraise modern constructions adopting period styles for their similarities
25.	18BIDC27	Studio V - CAD Application in Building Design	1. Draw ground floor, first floor plan, elevation and cross section using AutoCAD. 2. Create and explain detailed drawings of interiors in 2D 3. Develop interior drawings using 3Ds Max. 4. Visualise building interiors and exteriors using 3Ds Max. 5. Edit and present the image using Photoshop
26.	18BIDC 28	Studio-VI Model Making Workshop	1. Comprehend the techniques of model making 2. Enjoy making prototypes of different buildings 3. Determine scale model requirements 4. Benefit from the hands-on experience gained for future career prospects 5. Appraise/ compare feasibility of different materials for making models
27.	20BSCRM1	Co-curricular-Course Creative Arts and Crafts	1. Develop basic skill in drawing 2. Apply the skill of painting on paper and fabric 3. Understand the basics of developing a suitable design for various purposes 4. Enable to develop different craft items
28.	18BIDV01	Value added Course - Floral Art	1. Have a knowhow on the career opportunities available in the field of floral design. 2. Know the best care, handling, and construction techniques of fresh-cut flowers to extend the shelf life. 3. Identify and describe the principles of floral arrangements. 4. Apply the knowledge on basic tools and containers used by floral designers. 5. Identify the different seasonal and event opportunities available to floral designers
29.	18BPSI02 / 18BRDI04	DSE - Interior Decoration	1. Perceive and understand materials and tools by exploring forms, surfaces, textures, and patterns through elements and principles of design 2. To establish the design & craft skill relationship and appreciate 3. Expand comprehensible knowledge on essentials of Interior Design 4. Pertain the information related on color harmonies in interior 5. Widen creative acquaintance on art work for interior environment
30.	18BIDI01	DSE- I Perspectives of Home Science	1. Identify good design. 2. List personal goals and values, set living

			standards 3. Plan a balanced diet, enlist the principles of diet therapy and functioning of food service institutions 4. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental tasks of each life span stage 5. Understand the concept of Extension Education and its importance
31.	18BIDI02	DSE – II - Personality Development	1. Delineate the definition of personality, types, theories, techniques and improving measures of personality. 2. Classify the types of attitudes and various communication styles including the types and barriers. 3. Apprise self-management, self- esteem and stress management techniques. 4. Practice types of thinking and problem solving strategies. 5. Identify types of body language, facial expressions and kinaesthetic expressions.
32.	18BIDI03	DSE – III – Basics in Computer Applications	1. Understand the parts of a computer and use the computer 2. Use the tools in computer in ease and enhance work output 3. Create documents and folders, present them or store them in a prescribed format for further usage 4. Explore internet and its options 5. Use computer tools with the security options for safe and comfortable work
33.	18BIDI04	DSE – IV - Entrepreneurship Development	1. Have the ability to discern distinct entrepreneurial traits 2. Know the parameters to assess opportunities and constraints for new business ideas 3. Understand the systematic process to select and screen a business idea 4. Design strategies for successful implementation of ideas 5. Write a business plan

M.Sc., Interior Design and Resource Management			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MIRC01	Designing Life space and Interior Decor	1. Interpret, examine and reason out the role of various factors comprising concept of life space and their role in planning buildings

			2. Practice knowledge gained on selection of site and building principles in real life situations 3. Read, understand / comprehend building plans and evaluate them 4. Examine market trends, merits and demerits of building materials and finishes 5. Appreciate principles of design and the contributing factors and refine personal aesthetic senses
2.	20MIRC02	Sustainable Planning - Living Space and Resource Management	1. Emerge as more resourceful, socially responsive citizens and practice prudence in the use of resources 2. Act as champions of change by practicing the concept of R's in daily living 3. Sensitize people on the concepts of life cycle approach to sustainability 4. Translate into action by purchasing only star rated appliances in the homes 5. Insist on reducing individual carbon foot prints by becoming socially responsible consumers
3.	20MIRC03	Advanced Landscape Designing	1. Identify and raise various garden components 2. Differentiate gardens of various styles
4.	20MIRC04	Furniture and Furnishings	1. Understand the difference between furniture and furnishings 2. Differentiate period styles in furniture 3. Appreciate role of hard and soft furnishings in an interior 4. Relate innovations in furniture construction techniques, methods and materials 5. Contemplate on furniture/ furnishings' selection based on use, comfort, cost and ergonomics
5.	20MIRC05	Household Equipment –I	1. Relate concepts of electricity to operation of equipments 2. Compare various materials used in fabrication of appliances 3. Adept with the working principle of major and minor electrical appliances 4. Understand the role of ergonomics in designing household appliances 5. Appreciate support of organizations in developing and maintaining quality standards
6.	20MIRC06	Household Equipment-II (Practical)	1. Recognize the brands, cost and services available for various equipment 2. Become aware of operation and maintenance of major and minor equipment

			3. Determine minimum equipment required for establishing a family and evaluate them for quality standards 4. Plan a layout for modular kitchen 5. Repair minor complications/ problems faced while using electrical equipment
7.	20 MIRC07	Research Methods and Statistical Applications	1. Design the tools for collection; identify the samples, interpretation of data with the use of tables and pictorial representations. 2. Assess the numerical data for providing statistical evidences to support the research results. 3. Become a qualified researcher 4. Apply statistical tools to ensure reliability and validity of data 5. Present research data in a scientific manner
8.	20MIRC08	Renewable Energy	1. Appraise the significance and use of energy in different forms 2. Use various renewable energy devices and conserve fossil fuels 3. Live as good responsible citizens contributing to global energy conservation endeavours 4. Enjoy the benefits of using renewable energy sources 5. Formulate projects and approach funding agencies in future
9.	20 MIRC09	Creative Applied Arts (Practical)	1. Adopt aesthetics as a human value and a way of life 2. Understand the resourcefulness of wasted materials 3. Learn from doing and gain expertise in simple measures of decoration 4. Enjoy and benefit from interactive one- to -one learning 5. Find indigenous methods of designing interiors using locally available materials
10.	20MIRC10	Consumerism and the Green consumer	1. Practice knowledge gained on consumer rights and protection for personal good 2. Involve in research areas related to green practices 3. Encourage the neighbourhood to adopt 3R's concept of Reduce, Reuse and Recycle 4. Promote purchase of energy efficient and star rated products which consume less energy 5. Contribute to global cause as green consumer activists
11.	20MIRC11	Advanced Visual Representation-I	1. Create models of basic shapes and 3D designs manually

		(Practical)	2. Analyze, select and apply tools appropriate for creating a product using AutoCAD. 3. Create and edit 3D models using AutoCAD 4. Apply finishes for created models 5. Visualize and explain the created model
12.	20MIRC13	Trends in Architecture and Building Design	1. Follow the gradual transition from static to kinetic and dynamic structures 2. Locate the influence of man's desire for comfort and convenience over and above functionality 3. Understand trends created in capitalizing the advancements in science and technology in use of materials and methods used for construction 4. Visualize futuristic concepts in the field of architecture and building construction 5. Envisage challenges for modern day architects and civil engineers
13.	20MIRC14	Resource use in Entrepreneurship and Event Management	1. Appraise concepts related to entrepreneurship 2. Appreciate the significance of project planning/ formulation in implementing an enterprise 3. Take up 'entrepreneurship' as a lucrative profession 4. Focus on event management as an enterprise 5. Relate role of tourism and convention planning in effective event management
14.	20 MIRC16	Housing and Energy – Policies and Programmes (Open Book Test)	1. Decipher current housing and energy sector scenario in India as well as in the global set up 2. Approach crisis in housing and energy sector with a matured vision 3. Self motivate to be proactive partners in tackling energy crisis 4. Join hands with global players in enrolling people to change their attitude and to fight for a noble cause 5. Preach and practice sustainability concepts as a life style
15.	20MIRC18	Environmental Sanitation (Self-study Course)	1. Differentiate conceptual meaning of the terms like health, wellbeing and disease 2. Comprehend factors contributing to safety and security in the home environment 3. Recognize health issues of indiscrete/ irresponsible waste disposal systems in practice 4. Practice methods to convert/ transform waste to wealth 5. Decipher the role of Government in

			preserving the environment
16.	20MIRC19	Housekeeping and front office operations	1. Appraise the collective and collaborative role of various departments involved in Housekeeping 2. Understand the functioning of exclusive human resource departments 3. Draft an inventory of basic requirements in different departments 4. Draw office layout and components in public buildings meant for different purposes 5. Commission essential service maintenance personnel when needed
17.	20MIRC 21	Advanced Resource Management	1. Apply managerial abilities, philosophy and values in daily living and exhibit effective management skills 2. Plan and manage family resources efficiently 3. Practice the conservation of resources 4. Cope up successfully with stress and unexpected family crisis 5. Preach and practice efficient management skills at home and work place
18.	20MIRI01	Interdisciplinary Course - Interior Design Perspectives	1. Appreciate nuances of Interior Design and beauty of indigenous materials 2. Select and arrange furniture in interiors 3. Apply theme based colour harmonies in interiors 4. Analyze type of lighting and the lighting requirements for various rooms 5. Exhibit creativity in arranging/ decorating interiors
19.	20MIRM01	Green Consumerism (Multi-disciplinary Course – I)	1. Promote green marketing and green certification 2. Analyze environmental quality issues with respect to environmental sustainability 3. Adopt eco-friendly lifestyle for healthy living 4. Explore green consumerism practice and green production Study consumer behavior influences in the context of sustainable development

M.Phil/PhD Resource Management			
S. No	Course Code	Title of the Course	Course Outcome
1.	18MPRM01/ 18 PHRM01	Research Methodology and	1. Identify research problems, and research activities carried out at various levels

		Statistical Techniques for Resource Management	2. Gain thorough knowledge on adoption of suitable research tools 3. Design of research on the basis of area of research 4. Develop a research proposal on their field of research 5. Handle data analysis and interpretation of data effectively
2.	18MPRM02/ 18 PHRM 02	Advanced Family Resource Management	1. Know the concept of system approach, energy resources and resource recovery and its application in various sectors 2. Develop and evaluate simple equipment 3. Summarize recent housing scenario, interior design materials in our country 4. Evaluate and establish themselves as crucial consumers and trend making entrepreneurs
3.	19PHRM03A	Designing Space for Living	1. Interpret, examine and reason out the role of various factors comprising concept of life space and their role in planning buildings 2. Practice knowledge gained on selection of site and building principles in real life situations 3. Read, understand / comprehend building plans and evaluate them 4. Examine market trends, merits and demerits of building materials and finishes 5. Be Sensitive to the principles of design and the contributing factors and refine personal aesthetic senses
4.	19PHRM03B	Ergonomics in Work space Design	1. Administer the concept of ergonomics in design. 2. Identify the implications of posture on work. 3. Consolidate and analyse anthropometric data and adopt appropriate dimensions for design. 4. Design work space layouts that are ergonomic. 5. Envisage a comfortable physical environment for effective performance
5.	19PHRM03C	Work Life Balance of Employed Women	1. Acquire good managerial skills in their day to day life situations. 2. Become familiar with tools of time management. 3. Analyze, think critically, solve problems and make decisions. 4. Learn various coping techniques in

			stress. 5. Understand the concept of work-life-balance. 6. Acquire knowledge of leadership qualities.
6.	19PHRM03D	Ergonomics and its applicability in work space design	1. Gain knowledge of the importance of Ergonomics in Product Design 2. Know the relationship of Man Machine and Environment while designing work space. 3. Obtain information about work related Musculoskeletal Disorders due to poor posture. 4. Understand the concept of Anthropometric measurements and the factors to be considered while designing work space 5. Acquire the information about the different environmental factors to be considered while designing work space.
7.	19PHRM03E	Space Management in Residential Apartments	1. Develop skill in effective planning of space use within the restricted space in a economical way 2. Gain experience in reallocating available space to meet the demands of the residents 3. Will be able to fulfill the spatial needs of the inmates in apartments.
8.	19PHRM03F	Housing and Environmental Planning	1. To study the definition of slum and squatter settlements and the related issues with respect to rapid pace of urbanization 2. To study the growth process of slums and means of limiting such growth. 3. To provide information about redevelopment, improvement and up gradation of slum and squatter settlements and methods to facilitate the process 4. To study the roles of different housing and funding agencies. 5. To study the various policies and programmes related to housing at different level of planning and understand the various innovative and inclusive approaches for housing development and finance.
9.	19PHRM03G	Entrepreneurial Skill among Women	1. Analyse the business environment in order to identify business opportunities. 2. Identify the elements of success of entrepreneurial ventures.

			3. Explain the importance of marketing and management in small business venture. 4. Interpret their own business plan. 5. Consider the legal and financial conditions for starting a business venture.
10.	19PHRM03H	Designing Life Space	1. Interpret, examine and reason out the role of various factors comprising concept of life space and their role in planning buildings 2. Practice knowledge gained on selection of site and building principles in real life situations 3. Read, understand / comprehend building plans and evaluate them 4. Examine market trends, merits and demerits of building materials and finishes 5. Be Sensitive to the principles of design and the contributing factors and refine personal aesthetic senses
11.	19PHRMO3I	Ergonomic Concerns in Home and Farm Activities	1. Better comprehension on ergonomics and efficiency in rural 2. home and farm activities 3. Sharpened aptitude for analysing/ comparing drudgery reducing 4. tools and equipments used in farm and household activities. 5. Sensitized to contributions of Research Institutes in promoting ergonomic designing of tools and equipments for home and farm use and popularising them

Food Service Management and Dietetics

B.Sc. Food Service Management and Dietetics			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BFDC01	Food Science	1. Understand the food groups and their functions. 2. Acquire knowledge on different methods of cooking 3. Apply process of different foods 4. Use combination of foods in the development of food products. 5. Identify and control adulterants in various foods and evaluate food quality.
2.	18BFDC02	Principles of Nutrition	1. Acquire skill on various methods of assessing nutritional status. 2. Relate metabolism of macronutrients with health. 3. Comprehend the functions of micronutrients with health 4. Associate knowledge of nutrients with their deficiencies. 5. Apply the knowledge in determining the nutritional requirements.
3.	18BFDC03	Food Science Practical	1. Demonstrate skills on determination of edible portion, effect of cooking on volume and weight. 2. Choose appropriate cooking method to conserve nutrients. 3. Acquire skills on different methods of cooking. 4. Understand experimental cookery. 5. Develop recipes by applying knowledge on cooking methods and properties of food.
4.	18BFDC04	Principles of Nutrition Practical	1. Acquire skills to analyse various nutrients. 2. Competence to use various equipments for the analysis of nutrients. 3. Perform qualitative analysis of protein and minerals. 4. Demonstrate quantitative analysis of calcium, phosphorus and iron. 5. Analyze ascorbic acid quantitatively and assess cooking losses.
5.	18BFDI01	Discipline Specific Elective (DSE) Course DSE – I : Perspectives of Home Science (FSMD)	1. Identify good design, list their goals and values, set their standards 2. Enlist the principles of diet therapy and functioning of food service institutions 3. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental

			tasks of each life span stage 4. Understand the concept of Extension Education and its importance
6.	18BFDC05	Basics of Food production	1. Construct a menu and demonstrate skill in writing and display of menu. 2. Acquire pre-preparation and .preparation skill 3. Select and use different food production equipment 4. Comprehend objectives and importance of tandoori preparation and types of tandoori preparation. 5. Understand the characteristics and methods of cooking of Indian and International cuisines.
7.	18BFDC06	Operation Management	1. Acquire skills in executing front office duties. 2. Exhibit effective housekeeping skills. 3. Comprehend kitchen planning and organization of space. 4. Operate the various electrical and nonelectrical equipment. 5. Imbibe professional ethics.
8.	18BFDC07	Basics of Food Production Practical	1. Plan and construct menus for Indian regional cuisines and occasions. 2. Demonstrate preparation of soups, sauces and salads. 3. Skill in preparation of basic gravies in Indian cuisine. 4. Prepare menus for Indian, Continental and Oriental cuisines. 5. Organize and prepare menu for various functions.
9.	18BFDC08	Meal Management	1. Construct a balanced meal 2. Comprehend and relate the physiological changes and nutritional requirements in pregnancy and lactation meal planning. 3. Suggest infant supplementary feeds and plan meal for preschool children. 4. Understand nutrient needs and demonstrate food choices for school going children and adolescents 5. Develop suitable menus for geriatric population.
10.	18BFDC09	Human Physiology	1. Understand and distinguish the functions of organs in the body . 2. Comprehend the anatomy of the various organs . 3. Illustrate the processes of the respective system.

			4. Get sensitized about reproductive system and functions 5. Elaborate the regulation of body fluids and blood parameters.
11.	18BFDC10	Food Microbiology and Safety	1. Acquire the knowledge on the basic concepts of microbes in food and human welfare. 2. Relate the theoretical knowledge with microbes in environment . 3. Comprehend the knowledge gained on the characteristics of the microorganism in food and apply the techniques to control microbes. 4. Understand the relevance of microbial spoilage of various foods and its intoxications 5. Provide frame work on the concepts of Quality Control Activities
12.	18BFDC11	Meal Management Practical	1. Plan a balanced diet for various age groups. 2. Prepare and serve a balanced diet. 3. Calculate the nutrients contributed by a diet or meal. 4. Justify the choice of food and method of cooking. 5. Suggest dietary guidelines for different age groups.
13.	18BFDI04	Discipline Specific Elective (DSE) Course DSE – III Computer Applications in Food Service (FSMD)	1. Comprehend the use of computers and the recent application tools. 2. Acquire skills in documentation of the reports 3. Demonstrate spread sheets in pictorial presentations and mathematical formulas. 4. Create presentation, animations and graphical effects 5. Network different departments in food service operations.
14.	18BFDC12	Diet Therapy	1. Relate the causes, symptoms and onset of various types of diseases. 2. Comprehend dietary principles in planning therapeutic diets for disease conditions 3. Acquire professional diet counseling skills. 4. Manage a dietary department at the capacity of a dietitian. 5. Become a health care professional.
15.	18BFDC13	Bakery and Confectionery	1. Understand the principles of baking and confectionery. 2. Acquire knowledge on role of various ingredients used in baking and confectionery. 3. Use combination of foods in the

			development of baked products 4. Identify and control faults in baking. 5. Establish a bakery unit.
16.	18BFDC14	Diet Therapy Practical	1. Relate the causes, symptoms and onset of various types of diseases. 2. Apply dietary principles to plan therapeutic diets for diseases conditions 3. Demonstrate skills in preparing appropriate therapeutic diets and calculate the nutrient content of diets prepared. 4. Counsel and recommend personalized diets for various disease condition 5. Become a health care professional.
17.	18BFDC15	Bakery and Confectionery Practical	1. Demonstrate skills in determining the qualities of flour. 2. Develop skills in different methods of dough and batter making 3. Evaluate various methods of baking. 4. Make use of ingredients in baking. 5. Design common bakery and confectionery recipes.
18.	18BFDC16	Nutritional Biochemistry	1. Understand the basic concepts of biochemistry 2. Gain knowledge on metabolism of carbohydrate protein and lipids 3. Acquire knowledge on functions and mode of action of different hormones. 4. Relate metabolism of different nutrients with dietary intake. 5. Suggest preventive measures to overcome metabolic abnormalities.
19.	18BFDC17	Human Resource Management	1. Relate the human resource and managerial functions. 2. Plan effective managerial techniques. 3. Apply knowledge for manpower planning and selection process 4. Compile effective of employ wages. 5. Outline professional ethics and employees.
20.	18BFDC18	Food and Beverage Service	1. Outline the functions of food and beverage department. 2. Comprehend the various types of menu and appropriate cover 3. Acquire skills in cover laying. 4. Demonstrate food service etiquettes and skills while serving a guest/customer. 5. Manage a restaurant service and events
21.	18BFDC19	Paediatric Dietetics	1. principles of dietetics for infants and children 2. Plan suitable diets for nutritional disorders 3. Apply diet therapy for diabetes and

			congenital heart diseases 4. Evaluate feeding problems and counsel. 5. Create new feeds for children
22.	18BFDC20	Nutritional Biochemistry Practical	1. Skill in collection of blood and urine samples for analysis. 2. Competent in handling analytical equipments. 3. Choose appropriate analytical procedures 4. Perform quantitative and qualitative analysis of urine and blood sample . 5. Examine and interpret analytical results
23.	18BFDC21	Paediatric Dietetics Practical	1. Acquire skill in preparing the various types of weaning foods. 2. Analyze the common diseases of children and plan appropriate menus. 3. Exhibit skills in planning diet for special conditions 4. Connect suitable diets for nutritional disorders 5. Aware of preparation and administration of feeding techniques
24.	18BFDC22	Registered Dietitian Course (Self Study)	1. Aware of national and international dietetic organization. 2. Knowledge on syllabus for Registered Dietitian exam. 3. Competent in answering question relating to Human Physiology, Biochemistry, and, Food Microbiology, Nutrition and Dietetics. 4. Outline the components and pattern of questions of Rd examinations. 5. Apply for Registered Dietitian examination.
25.	18BFDC23	Food Service Management and Dietetics (Computer Based Test)	1. Comprehend the use of computers and the recent application tools 2. Acquire skills in documentation of the reports 3. Demonstrate spread sheets in pictorial presentations and mathematical formulas 4. Create presentations ,animations and graphical effects 5. Network different departments in Food Service Operations
26.	18BFDC25	Management of Food Service	1. Understand organization structures in food service institutions. 2. Comprehend the theories and principles of management. 3. Demonstrate marketing and sales promotional skills. 4. Aware of concepts of Total Quality Management. 5. Manage food requirements in disaster.
27.	18BFDC26	Entrepreneurship	1. Understand the forms and practices adopted

		Development	at small scale enterprises 2. Choose resources needed for an enterprise 3. Develop competencies in financial process practiced at the organisations 4. Compile the sales management tasks at the food based business 5. Take up Entrepreneurship ventures in food and other related areas.
28.	18BFDC27	Quantity Food production	1. Comprehend food service systems. 2. Plan and forecast production schedules. 3. Select appropriate purchasing procedures and issuing. 4. Skill in stepping up of recipes of different cuisines. 5. Manage a large scale food production unit
29.	18BFDC28	Food Product Development and Packaging	1. Know the recent concepts in food product development 2. Translate theoretical knowledge in evaluation of food products 3. Choose appropriate foods processing techniques. 4. Aware of laws governing food packaging and labeling. 5. Develop ready to eat and serve food products
30.	18BFDC29	Quantity Food production practical	1. Plan menus for food service institutions. 2. Standardise recipes for different cuisines at a large scale 3. Competent to prepare Indian and continental cuisines 4. Manage quantity food production, pricing and sale of the product. 5. Organise food production for different events.
31.	18BFDC30	Food Product Development Practical	1. Evaluate the acceptability of food products. 2. Formulate cereal and pulse based products. 3. Develop vegetable and fruit preserves. 4. Design and create novel instant and value added products. 5. Choose appropriate packaging materials and interpret labelling information
32.	19BAES01	Environmental Studies (Foundation Course)	1. Common Paper
33.	18 BTOI01	Discipline Specific Electives - Travel Catering	1. Understand the needs and scope of travel catering sector 2. Gain knowledge on the current trends in the travel catering 3. Develop competencies in menu, food production and service styles 4. Compile the functions of the different

			sectors of travel industry 5. Encourage entrepreneurship ventures in travel catering operations
34.	18BHDI02	Discipline Specific Electives - Food Service in Child Care Centers	1. Differentiate commercial and non-commercial food service and Understand the organization, duties and responsibilities of staff in child care centres. 2. Comprehend the requirements in setting up a food service unit in a child care centre. 3. Understand the nutritional needs of infants and preschoolers and plan suitable menu for a child care centre. 4. Demonstrate skill in preparation of feeds and other foods applying principles of sanitation and hygiene. 5. Know and understand the food service and book keeping procedures in child care centre
35.	18 BPSI04	Lifestyle Health	1. Understand the link between nutrition, health and lifestyle. 2. Knowledge on assessment of nutritional status. 3. Understand different lifestyle disorders. 4. Able to make healthy food choices. 5. Adopt healthy lifestyle practices
36.	18BFDV01	Value Added Course (Cullinary Skills)	1. Understand basics of cooking. 2. Skilful in using different food processing equipment's. 3. Able to carry out different prep reparation techniques for cooking 4. Capable of cooking different types of cuisines. 5. Adopt healthy food choices
37.	18BFDO01	Generic Elective (GE) Course(Lifestyle practices)	1. Relate nutritional requirement for various stages of life. 2. Plan a balanced diet. 3. Distinguish between healthy and unhealthy life style practices. 4. Correlate life style practices with health outcomes 5. Practice and promote healthy life style practices.

M.Sc. Food Service Management and Dietetics			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MFDC01	Advanced Food Science	1. Recognise the characteristics and sensory properties of foods 2. Summarise the knowledge gained on characteristics and properties of foods

			during cooking 3. Relate the properties of food in various food processing and preparations 4. Criticize the factors affecting cooking quality 5. Interpret the appropriate food preparati processing methods for the different food grou
2.	20MFDC02	Advanced Food Science Practical	1. Recognise the techniques of objective and subjective methods of evaluating foods 2. Demonstrate the knowledge gained on characteristics and properties of foods during pre-preparation, preparation and storage. 3. Summarise the properties of food in food processing and preparation techniques 4. Relate the factors affecting quality of foods during cooking process 5. Interpret appropriate food preparation and processing methods to ensure standards in food industry
3.	20MFDC03	Community and Public Health Nutrition	1. Understand and apply nutritional assessment techniques 2. Know about nutritional requirements of different age group and promote healthy living in the community 3. Comprehend the dietary guidelines in outbreak of diseases for different age group 4. Enable to familiarize various organization to compact malnutrition. 5. Opportunities in Government and NGO s as public health nutritionist
4.	20MFDC04	Operations Management in Food Service	1. Acquire knowledge and skills required to work in front office . 2. Practice reservations, check in and check out procedures. 3. Handle guest requests and emergencies 4. Assist in training and recruitment of new employees. 5. Identify measures to maintain guest safety and security
5.	20MFDC05	Food Microbiology and Safety	1. Know the basic concepts of microbes in food biotechnology, Genetically Engineered Organism and in Human Welfare. 2. Ability to relate the theoretical knowledge with the current situation of microbes in environment 3. Understand and to examine the relevance of microbial spoilage of various foods. 4. Provide frame work to examine the relevance of microbial spoilage of various

			foods. 5. Apply the food safety and quality control in suggest situation.
6.	20MFDC06	Advanced Dietetics I	1. Apply the principles of dietetics as a distinct therapy for various diseases and disorders 2. Gain knowledge on the types and role of dietitians 3. Understand the different therapeutic diets 4. Learn the dietary management for gastrointestinal, liver and gall bladder diseases. 5. Relate dietary management for nutritional deficiency and special conditions.
7.	20MFDC07	Advanced Dietetics I Practical	1. Acquire skills to prepare hospital diets 2. Plan diets based on dietary principles 3. Set up diet trays and calculate nutrients 4. Plan and prepare appropriate diets for therapeutic conditions 5. Apply knowledge in counseling for disease conditions.
8.	20MFDC08	Nutraceuticals and Nutrigenomics	1. Identify functional foods, designer foods and dietary supplements. 2. Interpret the function of nutraceuticals in dietary supplements. 3. Understand the interaction of nutrient and genes. 4. Infer the role of nutraceuticals in the management of health and diseases 5. Know the guidelines of National and International regulatory bodies.
9.	20MFDC09	Biochemical Changes In Diseases	1. Know the constituents of body fluids and their clinical significance. 2. Comprehend the factors involved in normal metabolism and disorders of metabolism. 3. Relate the clinical symptoms to metabolic changes in diseases. 4. Interpret and associate results of analytical tests to symptoms and progression of diseases. 5. Understand the interaction of nutrients with drugs
10.	20MFDC10	Clinical Lab Techniques	1. Acquire skills to analyze bloods parame using different methods. 2. Apply techniques to estimate various parame in urine. 3. Learn to estimate biomarkers for CVD

			diabetes using auto analyzer. 4. Learn to estimate biomarkers for liver & kid functions using auto analyzer 5. Interpret and relate analyzed values with or of diseases.
11.	20MFDC11	Advanced Dietetics II	1. Explain the etiology and patho-physiology of metabolic and degenerative diseases. 2. Infer knowledge on the role of diet therapy during the various diseases 3. Transfer the knowledge in planning diets with disease conditions 4. Create counselling aids and process on the dietary management of the metabolic and degenerative diseases 5. Design CAI for diet planning and counselling process
12.	20MFDC12	Advanced Dietetics II Practical	1. Develop skills in planning therapeutic diets 2. Relate the disease condition and plan appropriate menus 3. Infer nutritional adequacy of the diet plans 4. Transfer the types of diet plans in diet preparation and diet setting 5. Design techniques in diet planning and assess patient compliance
13.	20MFDC13	Research, Statistical Methods and Computer Applications	1. Comprehend the different types of research and various tools of data collection. 2. Translate the knowledge gained on types of data and tools of data collection in compiling editing and coding of data and hypothesis 3. Perform Statistical analysis 4. Interpret and justify the research findings 5. Design, execute and document a research
14.	20MFDC15	Financial Management and Entrepreneurship in Food Service	1. Capable of adapting the business practices in food service organizations 2. Aware of various sources of finance and marketing procedures 3. Competent in accounting procedures practiced in the food service organizations 4. Compile and maintain financial statements. 5. Take up Entrepreneurship ventures in food service and food processing sector.
15.	20MFDC16	Food Processing and Product Development	1. Practice the basic concepts of food processing, adhering to recent trends in processed foods

			2. Relate the theoretical Knowledge of Processing Techniques in food product development. 3. Gain expertise in Processing various food commodities . 4. Develop novel value added nutritious and therapeutic food supplements/products 5. Aware of food standards for packaging and labeling
16.	20MFDC17	Food Processing and Analysis Practical	1. Able to formulate and develop different Non -perishable food products 2. Capable of formulating and developing different perishable food products 3. Analyze the nutritional quality of the food products. 4. Competent to estimate calcium, iron and vitamin C food sample. 5. Learn the working principles of equipment's used for food analysis
17.	20MFDC18	Quantity Food Production and Service Techniques	1. Design and write menus. 2. Standardize production of recipes and evaluate and price menus. 3. Understand the different purchasing methods, product specifications and standards. 4. Plan, organize and implement large scale production and distribution offood. 5. Manage food service and understand different food and beverage service techniques.
18.	20MFDC19	Quantity Food Production Practical	1. Categorize different cuisines 2. Know how to select and use equipments in food preparation 3. Gain skill in pre preparation methods 4. Learn the various types of cooking methods 5. Acquire skills in table setting
19.	20MFDC20	Fitness Management	1. Identify factors affecting fitness and health status. 2. Assess individuals for physical and cardiac fitness. 3. Design age specific fitness program based on level of physical activity 4. Recommend suitable dietary and physical fitness plan for disease conditions. 5. Manage a fitness center.
20.	20MFDC21	Diabetes Counselling	1. Aware on the importance and principles of

		(Self Study C ourse)	dietetics in the management of diabetes 2. Gain knowledge on the role of dietitian in diabetes management 3. Understand the etiology, management and prevention 4. Learn the dietary management for the types of diabetes 5. Relate dietary management and lifestyle counselling
21.	20MFDC23	Food Service Management	1. Comprehend and apply theory and principles of management for effective administration of an organization. 2. Develop skills to start a food service unit. 3. Manage human resources and solve problems with corrective actions. 4. Analyze and implement quality control in food service institution. 5. Identify the steps or Recognize the know how to promote the product in the market.
22.	20MFDC24	Food Laws, Standards and Health Policies (Open Book Test)	1. Recollect the food safety system and quality attributes. 2. Comprehend the knowledge gained on food laws and food safety regulations at regional and national levels. 3. Distinguish the role of national and international agencies in establishing food standards. 4. Execute Food laws and food safety standards in food service operations. 5. Monitor and evaluate food laws and standards in food service industry.
23.	20MFDI01	Interdisciplinary Course Food and Health Science	1. Know the relationship between food and health 2. Acquire skills to plan menus for different age group 3. Gain knowledge on good nutrition &healthy eating practices 4. Learn the causes and management of lifestyle diseases 5. Acquire insight for application in life.
24.	20MFDPC1	Professional Certification Course Employability Development Program (EDP)	1. Understand the significance and essence of a wide range of soft skills. 2. Learn how to apply soft skills in a wide range of routine social and professional settings. 3. Learn how to employ soft skills to improve

			interpersonal relationships 4. Learn how to employ soft skills to enhance employability and ensure workplace and career success.
25.	20MFDM01	Multidisciplinary Course Women Health and Well being	1. Understand the common health problems of women. 2. Suggest foods to overcome nutritional deficieny diseases. 3. Design diets for Obesity and PCOD. 4. Infer the recasons for malnutrition. 5. Plan healthy diets and follow healthy dietary practices in pregnancy and lactation.

PG Diploma in Nutrition and Dietetics			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PDND01	Fundamentals and Principles of Food Science	1. Recollect the different types of food groups and their uses 2. Apply the knowledge gained in principle of cooking to develop novel food products 3. Analyze the sensory and objective characteristic of foods 4. Develop and process different food products adhering to food standards. 5. Adopt appropriate storage techniques for different foods
2.	19PDND02	Techniques in Food Science Practical	1. Apply the techniques of objective and subjective methods of evaluating foods. 2. Demonstrate the knowledge gained on characteristics and properties of foods during pre-preparation, preparation and storage. 3. Apply and evaluate the properties of foods in various food processing and preparations. 4. Analyze the factors affecting cooking quality of foods. 5. Create appropriate food preparation techniques and to ensure standards in food industry.
3.	19PDND03	Human Nutrition	1. Understand the various nutritional functions and sources of various nutrients. 2. Acquire skills to overcome

			nutritional deficiency diseases. 3. Gain knowledge to overcome the effects of micronutrient deficiency. 4. Understand the reasons for malnutrition and under nutrition. 5. Competent in planning healthy diet for all age groups
4.	19PDND04	Clinical Nutrition	1. Acquire skill the functions and changes in related to disease of various system. 2. Demonstrate a knowledge of medical terminology and medical abbreviations associated with nutrition related diseases and conditions. 3. Demonstrate a knowledge of clinical and physiological aspects of nutrition 4. Understand the scientific knowledge and principles related to nutrition into practical information 5. Learn the knowledge of nutrition principles and their application to disease prevention and treatment.
5.	19PDND05	Dietetics	1. Know the importance and principles of dietetics as a distinct therapy for diseases. 2. Gain knowledge on the types and role of dietitians. 3. Understand the different therapeutic diets. 4. Plan and manage the dietary requirements for gastrointestinal, liver and gall bladder diseases. 5. Relate dietary management for nutritional deficiency diseases.
6.	19PDND06	DieteticsPractical	1. Learn to prepare hospital diets. 2. Plan diets based on dietary principles. 3. Set up diet trays and calculate nutrients. 4. Equip to become a dietitian. 5. Counsel on the dietary management.
7.	19 PDND07	Registered Dietitian Compliance Course-self study	1. Aware of national and international dietetic organization. 2. Knowledge on syllabus for Registered Dietitian exam. 3. Competent in answering question relating to Human Physiology, Biochemistry, and, Food

			Microbiology, Nutrition and Dietetics. 4. Outline the components and pattern of questions of Rd examinations. 5. Apply for Registered Dietitian examination.
8.	19PDND09	Food Microbiology and Food Safety	1. Know the basic concepts of microbes in food biotechnology. 2. Ability to relate the theoretical knowledge with the current situation of microbes in environment. 3. Understand and to examine the relevance of microbial spoilage of various foods. 4. Manage to prevent microbial spoilage of various foods. 5. Apply the food safety and quality control in suggest situation.
9.	19PDND10	Food Production and Service in Dietaries	1. Gain skills in planning menu for dietaries based on patient needs 2. Apply quantity food production techniques for hospital dietaries. 3. Purchase appropriate equipment for hospital dietaries. 4. Plan work areas, floor finishes, kitchen layout for hospital dietaries department. 5. Compile the ways of obtaining food license, municipal rules and regulations.
10.	19PDND11	Food Production and Service-Practical	1. Apply the principles of menu planning for different cuisines. 2. Prepare different national and international recipes. 3. Gain skills in napkin folds. 4. Gain skills in laying a table cover for A'la carte , Table d' hote, breakfast, high tea in various food service 5. Develop recipes in quantity.
11.	19PDND12	Hospital Dietary Food Service Management	1. Acquire knowledge on the principles, tools and functions of management. 2. Administer dietary department and food service units in a hospital. 3. Manage production and service of

			diets and menus in hospital food service. 4. Ensure quality control and implement management information system. 5. Plan budgets and apply cost control measures.
12.	19PDNDE1a/	Patient Counselling Techniques/	1. Gain a comprehensive view of Counselling 2. Competency in professional Counseling 3. Efficiency in conduct of the Counselling Process 4. Apply skills of Counselling in different fields.
13.	19PDNDE1b	Diabetes Counselling	1. Know the importance and principles of dietetics in the management of diabetes 2. Gain knowledge on the role of dietitian in diabetes management 3. Understand the etiology, management and prevention 4. Learn the dietary management for different types of diabetes 5. Relate dietary management and lifestyle counselling.

M.Phil /Ph.D Food Service Management and Dietetics			
S. No	Course Code	Title of the Course	Course Outcome
1.	19 PHFD01/ 19MPFD01	Research Techniques and Statistical Applications in Food Service Management and Dietetics	1. Comprehend the different types of research and various tools of data collection. 2. Gain competency to frame and test research hypothesis. 3. Translate the knowledge gained on research techniques in conducting a research and statistical analysis and compilation of data using latest software 4. Interpret and justify the research findings 5. Documentation and publication of research findings by adhering to research ethics.

2.	19PHFD02/ 19MPFD02	Advanced Paper in Food Servic Management and Dietetics	1. Apply theory and principles of management to manage various resources and solve problems with remedial measures 2. Establish a food service unit. 3. Designing value added products to suit the nutritional requirements of individuals for the community 4. Apply the knowledge in planning diets and counsel for the non-communicable and communicable diseases. 5. Innovate and develop therapeutic diets/ nutraceutical value added products for various disease conditions
3.	20MPRP04/ 20PHRP04	Research and Publica Ethics	1. Common Paper
4.	**19PHFD03A**	**Micro Greens**	1. Know the nutritional importance and relevance of micro greens. 2. Gain knowledge on different varieties of micro greens. 3. Understand the growing techniques of various varieties of micro greens. 4. Analyze the shelf life of harvested microgreens . 5. Formulate value added products from microgreens.

Human Development

B.Sc Human Development			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BHDC01	Foundations of Development	1. List the most significant facts of developmental changes while comparing and contrasting the concept of growth and development. 2. Describe what genes are and how they influence human development 3. Recognize the eight stages of human life span and its unique features with an appraisal of the interrelatedness of the domains of development 4. Explain the genetic origins and characteristics of chromosomal abnormalities and identify some important reproductive challenges and choices 5. Illustrate the structure of ovum and sperm and the process of fertilization
2.	18BHDC02	Prenatal and Neonatal Development	1. Recognize the dynamics and importance of prenatal period as a crucial stage of human development 2. Value the role of hereditary and environmental factors in the growth and development of the fetus 3. Apply the knowledge and help to exercise healthy childbearing practices for self and other individuals 4. Develop consciousness of the associated complications and act in response to preventive measures 5. Create and manipulate the surroundings to facilitate infant friendly atmosphere for optimal growth the development
3.	18BHDC03	Methods of Child Study– Practical - I	1. Understand the need and principles of studying child development and behaviour. 2. Identify various scientific methods of studying children in different situations 3. Analyse the strengths and shortcoming of each of the methods of child study 4. Apply the appropriate child study techniques and approaches in different situations and evaluate them 5. Document a case study for contextual analysis
4.	18BHDI01	DSE-I Perspectives	1. Understand the concept of Home Science

		of Home Science (HD)	and its component 2. Identify good design, list their goals and values, set their standards 3. Enlist the principles of diet therapy and functioning of food service institutions 4. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental tasks of each life span stage 5. Understand the concept of Extension Education and its importance
5.	18BSE101	Introduction to child development (offered to Special Education Department)	1. Understand the significant characteristics of each stages of life as the children develop from a single cell to adolescence 2. Appraise the specific developmental tasks of an individual pertaining to each stages of human life span specifically from prenatal to adolescence 3. Recognizes the impact of nature, nurture and its interaction on normal growth and development of children 4. Analyse the common problems and hazards during each periods and its impact on quality of life 5. Adjudge the importance of understanding developmental psychology of children and its implications in varied inter and multi-disciplinary field
6.	18BHDC04	Infancy and Toddlerhood	1. Define the labels “Infant” and “Toddler” and describe their characteristics 2. List the developmental milestones and tasks to be accomplished by the end of 2 years and recognize the seriousness of not mastering these tasks 3. Explore the infant’s and toddler’s remarkable capabilities – Early reflexes, ability to learn, motor skills and perceptual capacities 4. Adjudge the importance of proper care and better interaction between the caregivers and the baby with an understanding of the different facets of a baby’s cognitive, emotional and social development 5. Appreciate the statement that ‘Infancy is a critical period of development’
7.	18BHDC05	Elements of Human Behaviour	1. Understand the basic elements of human behaviour 2. Recognize the role of brain and endocrine

			glands in an individual's development 3. Evaluate strategies to foster memory 4. Apply the principles of classical and operant conditioning for effective learning 5. Analyse information processing towards sensation and perception
8.	18BHDC06	Developmental Assessment of Children – *Practical - II*	1. Recognize various tools and techniques to study the different domains of development in children 2. Employ the standardized charts on growth and development of children by assessing their anthropometric status of children. 3. Administer the memory tests to assess the learning capacity of children and interpret the findings 4. Assess the cognitive ability of the children by administering and interpreting Gesell drawing test and Pandey's cognitive development test 5. Locate and appraise various screening techniques to identify developmental delays among children
9.	18BHDC07	Early and Late Childhood	1. Recognize the characteristics, developmental tasks and milestones of early and late childhood period 2. Understand the physical, motor, cognitive, language, moral development in the early and late childhood period and compare the changes in these areas with that of the babyhood 3. Explore the reasons for change in family and peer relationship from one period to the other 4. Adjudge the understanding on the moral attitudes and behaviour from the period of early childhood to late childhood 5. Explain why early childhood should be a happy period and identify factors influencing the degree of happiness in the late childhood period
10.	18BHDC08	Early Childhood Care and Education	1. Understand the concept, significance and types of ECCE 2. Appraise the historical perspectives of ECCE in India and abroad 3. Recognize the features and components of

			ECCE curriculum 4. Enumerate the significance of play in ECCE curriculum 5. Adjudge the inclusive strategies for children with special needs
11.	18BHDC09	Designing Learning Materials and Toys for Children- *Practical – III*	1. Understand the importance of designing learning materials and toys for children 2. Explore various avenues to device teaching aids in fostering language development 3. Apply the skills in formulating booklet and picture books to stimulate cognitive growth in children 4. Innovate worksheet to enhance a child's readiness 5. Mastering the skill of making toys and designing learning material for children
12.	18BHDC10	Adolescence	1. Understand the term adolescence, its timing and subdivisions 2. List the unique characteristics, the developmental tasks and the milestones of the adolescent period and recognize the seriousness of identity crisis 3. Explore the adolescent's remarkable cognitive capabilities and the abstract thinking process and reason out the consequences of abstract thought 4. Adjudge the changes in morality and explain its effects on their attitude and behaviour 5. Defend the statement that "Only the early part of adolescence is difficult"
13.	18BHDC11	Management of Preschool Centres	1. Understand the requirement of setting up apreschool 2. Recognize the importance of need based preschool curriculum 3. Apply the principles of preschool programme planning towards holistic development of children 4. Appraise the principles of play equipment based on different domain of development 5. Evaluate the overall preschool programmes with set indicators
14.	18BHDC12	Tests and Measurements for Adolescents – *Practical - IV*	1. Describe the need and the process of psychological assessment 2. Recognize the guidelines in using appropriate tests and measurements

			3. Master the administration and interpretation of intelligence and personality test 4. Apply the cross sectional approach of human study measuring the EI 5. Equip the skills in identifying the maladjustments
15.	18BHDI04	DSE –IV Computer Applications in Human Development(HD)	1. Understand the fundamentals of computer applications and its usage 2. Demonstrate skills with easy operation 3. Gain proficiency in using skills and techniques for academic work 4. Enhance their aptitude for smooth transition in ICT learning system 5. Apply learned skills for digital transactions and combating technological challenges
16.	20BHDV01 (Value Added Course)	Designing Learning materials for Early Childhood years	1. Understand Multiple Intelligence 2. Identify learning styles of the child 3. Appraise the various readiness activities for children 4. Design developmentally appropriate learning materials 5. Apply the learnt concept of readiness in preparing teaching aids and learning materials
17.	18BHDC13	Marriage and Family Relations	1. Understand the concept, functions and factors associated with marriage and family 2. Comprehend the problems in marriage and family and examine the effect of the problems on the children, family and on the society and explore its remedial measures 3. Recognize current issues in marriage and family setting, as well as its changing patterns 4. Analyze the approaches and therapies for families 5. Appraise the legislation policies for marriage and family services, and plan need based education intervention
18.	18BHDC 14	Adulthood and Oldage	1. Understand the aspects of the adulthood 2. Appraise the problems and adjustments of early and middle adulthood 3. Define aging from many perspectives: emotional, physiological, economic, social, cognitive, financial and philosophical 4. Address the problems of elderly 5. Transform theoretical knowledge to geriatric

			care practices 6. Describe the range of services available to meet the needs of older adults
19.	18BHDC 15	Parenting	1. Know the need and importance of parenting and its tasks 2. Examines the theoretical approaches to child rearing in families: emphasis on developing practical skills to become parent 3. Understand the role of early interaction and stimulation 4. Apprehend the basic child needs and its fulfillment 5. Evaluate the common childhood problems and treatment
20.	18BHDC 16	Personality Traits and Development	1. Understand the concept of personality and its development 2. Comprehend the determining factors of human personality and its implications in real life 3. Fostering personality for growth or development 4. Assessing oneself and know the pathway to change 5. Identify the abnormality in personality development
21.	18BHDC 17	Implementation of Preschool Programme-*Practical-V*	1. Prepare daily activities for preschool 2. Create conducive learning environment in preschool class rooms 3. Apprehend the skills of conducting PTA meetings 4. Get hands on experience in maintaining records and registers *5.* Equip to administer an early learning centres
22.	18BHDC 18	Prospects of Human Development *(Self-study Course)*	1. Understand the human development across the life span in different milieu and changing environment 2. Recognize the complexity and comprehensive career options in human development 3. Analyze their skills for making decision on career development 4. Appraise the professional and ethical standards of conduct while upholding the helping, leadership and administrative skills 5. Evaluate and apply the theory and research into practice, as well analyze the processes and policies that affects the delivery of services to community

23.	18BHDO01	Teen's Health – Generic Elective (GE) Course (Open Course)	1. Understand the concept and developmental stages of adolescence. 2. Apprehend the, changes problems and needs of teens 3. Recognize the nutritional requirements and balanced diet for youth 4. Aware the need for healthy life and life style modification 5. Appraise the strategies for promoting the reproductive health of young people 6. Transforming the skills to become healthy individual
24.	18BHDC21	Basics of Counselling	1. Understand the underlying principles of counselling 2. Characterize the nature of clients and need for counselling 3. Distinguish the approaches and strategies of counselling and its applications 4. Acquire the basic skills and techniques for counselling 5. Apply the acquired knowledge and skills in helping self and others.
25.	18BHDC 22	Basic Human Resources	1. Understand the basics of human resources or capabilities 2. Indentify the difference between Human Development and Human Resource Development 3. Apply the skill namely leadership teamwork and motivation for productive living 4. Explore the strategies in foster EI and SI 5. Examine the determinants of human resource towards human development
26.	18BHDC 23	Teaching Skills and Techniques	1. Identify the principles of teaching as well as methods and techniques teaching 2. Recognize the skills of effective teaching and understand the modes of teaching and learning, teaching styles and presenting skills for effective teaching 3. Plan and prepare methods and techniques of teaching for effective learning 4. Understand teaching style and learning style, examine the skills in using instrumental media in effective teaching 5. Value the organization of classroom, judge the interactive sessions for teaching and learning, evaluate the use of visual aid as well as apply the principles of teaching to modify and adapt new teaching styles in making teaching and learning effective
27.	18BHDC 24	Nutrition through	1. Understand the need and importance of food

		Life Span Development	and its functions 2. Examine the requirements of nutrition during pregnancy and lactation 3. Learn to prepare and plan menu for preschoolers and to prevent and nutrition deficiency problems of preschoolers 4. Apprehend the nutrition requirements for school age and deficiency diseases 5. Assess the importance of therapeutic diet and RDA for aged
28.	18BHDC 25	Human Rights and Welfare Programmes	1. Understand the importance of human rights 2. Recognize the approaches of human rights towards diverse societal setting 3. Appraise the framework of child and women rights for transformative learning process 4. Analyse about the implementation of rights and laws in the national setting 5. Evaluate programmes in context with potentialities and limitations
29.	18BHDC 26	Life Skills for Self Development – *Practical–VI*	1. To familiarize with the concept of life skills and identify the ten core life skills needed for a healthy and productive life 2. Understand the prominence and employment of life skills to enhance adaptive and positive behaviour in individuals 3. Make practical and realistic use of core life skills in daily life to deal with the demands and challenges of everyday life 4. Differentiate between life skills and other skills that helps in acquiring coping and self-management skills to promote health and development 5. Characterize and internalize life skills towards receiving, responding, exploring and translating into actual abilities to enhance adaptive and positive behaviour
30.	20BHDCC1	Preschool Teaching (Co-curricular)	1. Recognize the need and importance of Early Childhood Care and Education 2. Understand the essentialities for curriculum development and programme planning in ECCE 3. Apply the features of curriculum development in programme planning for ECCE 4. Appraise the desirable characteristics of ECCE personal and the roles and responsibilities of administrators for effective preschool teaching

			5. Formulating preschool activities with thematic approaches to enhance all round development of children
31.	15BSCEC1	Early Childhood Education (Co-curricular)	1. Recall the concept, significance, objectives, scope and types of ECE 2. Identify the types of ECE Curriculum, teaching pedagogy, medium of learning and assessment of children 3. Comprehend the principles of planning programme, learning environment, activities, play materials and documentation 4. Design sample ECE programme, activities, learning environment and play materials 5. Implement and evaluate the developed ECE programme and activities

M. Sc Human Development			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MHDC01	Theories of Human Development and Behaviour	1. Recognize the interdisciplinary attribute of human development and identify the theories of development based on each developmental domain and behaviour 2. Understand the assumptions, beliefs and implications based on each developmental domain and behaviour 3. Implicate the theoretical concept in inferring the human development and behaviour in various situations at all stages of life span 4. Analyze the theoretical interactions between the developments and behaviour 5. Evaluate critically the implications of theoretical concepts and principles with real life situations
2.	20MHDC02	Family Dynamics	1. Recall the concept of marriage, family and parenthood and identify the types, goals and functions 2. Understand the theoretical perspectives of marriage and family 3. Analyze the challenges and changing trends in marriage, family and parenthood 4. Appraise the legal issues related to marriage and family 5. Develop the parent education intervention package for parenting practices
3.	20MHDC03	Life Span Development I - (conception-	1. Recognize the stages of life span and recall the development associated with each stages

		childhood)	2. Understand the sequence and the process of life span development from conception till childhood 3. Analyze the interaction and interdependency of the developmental domains through conception till childhood 4. Evaluate the heredity vs environment / nature vs nurture's interaction and impact on the developmental domain through conception till childhood 5. Formulate a framework depicting the interaction, interdependency and nature vs nurture influences on all the developmental domains through conception till childhood
4.	20MHDC04	Fundamentals of Counselling	1. Recognize the need for counselling and recall the goals and principles 2. Understand the concept of counseling and importance of counselling skills and qualities of counselor 3. Implications of counselling skills in counselling process 4. Evaluate the counseling skills, process and qualities of counselors in specialareas of counselor 5. Develop a counselling model to address the special areas of counselling
5.	20MHDC05	Early Childhood Education	1. Recall the significance, objectives, scope and types of ECE settings and professionals 2. Understand the concept of DAP and early learning environment in ECE programmes 3. Infer and apply the implication of developmental theories in ECE settings 4. Evaluate the consequences of developmentally inappropriate practices in the existing ECE scenario 5. Design a sample domain specific activity based on DAP principles
6.	20MHDC06	Methods and Techniques of Assessment in Human Development – Practical I	1. To understand the methods of conducting research in Human Development 2. To recognize the classification of the methods and techniques of assessment in Human Development based on life stages 3. To apply methods and techniques of assessment of growth and development based on life stages 4. To analyze the assessment of growth and development and draw indices based on the methods and techniques used 5. To evaluate and interpret the results of assessment of growth and development

7.	20MHDC07	Computer Applications in Human Development – Practical II	1. Understand the fundamentals of computer applications and its usage 2. Identify the applications of operating basic software for academic and research purpose 3. Implement the computer applications in academic and research work 4. Evaluate the applications of SPSS in research work 5. Design related academic portfolio by using various learned applications
8.	20MHDC08	Life Span Development II - (adolescence- middle age)	1. Recognize the developmental tasks and milestones and recall the concept of development from adolescence to middle age 2. Understand the development in the theoretical perspectives across adolescence to middle age 3. Analyze the development and its interdependency, attainment of developmental tasks and individual differences and the existing problems during adolescence to middle adulthood 4. Evaluate the problem areas and its management strategies being focused on the causative factors during adolescence to middle adulthood 5. Formulate a framework to highlight development during adolescence to middle adulthood, theoretical perspective of the development, associated problems and management strategy
9.	20MHDC09	Research Methods and Statistical Applications	1. Recognize the characteristics and types of research and research design and measures of central tendency 2. Understand the sampling methods, data collection methods and data classification 3. Analyze the data classification types and the application of statistical analysis 4. Apply the statistical tests of significance and descriptive measures to interpret the results and draw conclusions 5. Formulate the research design using all the components and develop a thesis layout according to the research problem
10.	20MHDC10	Counselling Techniques and Approaches	1. Identify the techniques, types and approaches of counselling and recall the characteristics and steps 2. Understand the concepts of counseling approach and its implications in counselling types

			3. Analyze the cases in relation to various therapies 4. Evaluate the cases and identify the therapy and techniques used 5. Formulate a framework of counseling approach for any given case
11.	20MHDC11	Organization of ECE Programme	1. Identify types of ECE curriculum, programme, teaching pedagogy, medium of learning and assessment 2. Understand the concept of early childhood education in Western and Indian context and recognize the ECE policy framework at national level 3. Analyze the various models and approaches of ECE curriculum to identify its advantages and limitations 4. Design a developmentally appropriate ECE curriculum 5. Evaluate the designed developmentally appropriate ECE curriculum based on the specified indicators of effective curriculum
12.	20MHDC12	Test and Measures of Human Development and Behaviour – Practical III	1. To recognize the different tests and measures of assessment of human development and behaviour 2. To apply the tests and measurements to assess development and behaviour in different spheres 3. To analyze the assessment of development and behaviour and draw indices based on the norms of tests and measures 4. To evaluate and interpret the results of assessments 5. To formulate assessment tools to assess development and behaviour of individuals
13.	20MHDC13	Counselling Skills and Techniques – Practical IV	1. Recognize the counseling skills and its application 2. Understand the role of counselor in assessment and diagnosis of the problem 3. Analyse the counseling set up at organizational levels 4. Apply various counseling skills and conduct peer counseling 5. Evaluate the cases and formulate an approach for effective counseling
14.	20MHDI01 IDC	Human Development and Cultural Heritage (Offered for other departments)	1. Understand the various culture, language and society according to human development perspective 2. Recognize the imbalance in sex ratio, socio-cultural issues in India 3. Analyze the implications of cultural aspects

			in human development and health 4. Evaluate relevance of human development in the interest of human heredity 5. Develop and inculcate sanskaras, culture to practice and spread Indian cultures worldwide
15.	20MHDC15	Gerontology	1. Recognize the concept and phenomenon of process of aging 2. Understand the consequences of aging in relation with their health and socio economic profile 3. Apply the theories of aging to describe the developmental changes associated with aging 4. Analyze the best practices of geriatric care within their family and also in the community 5. Evaluate the issues related to aging in the contemporary society and the services available as well as catering to the need of the aged
16.	20MHDC16	Human Rights (Open book)	1. Identify the concept, classification and significance of human, women and rights 2. Understand the human rights issues in India with reference to vulnerable groups 3. Apply the knowledge of gender issues in formulating strategies for promoting gender equality 4. Evaluate the effectiveness of human rights in the current scenario in view of the present status of vulnerable group 5. Analyze the strategies for advocating human rights in the society.
17.	20MHDC17	Children with Special Needs	1. Recognize the types of disability/disorder and recall its characteristics 2. Understand the need for early identification for early intervention to reduce the severity of the disability/disorder 3. Apply the learnt concept in early identification of the disability/disorder for referral services 4. Analyse the causative factors and its management strategies for each type of disability/disorder 5. Evaluate the existing treatment focusing on the severity of the disability/disorder
18.	20MHDC18	Portfolio Development for ECCE Professionals - Practical V	1. Understand the concept of portfolio development and its importance in preschool education scenario 2. Identify the need and importance of

			portfolio development of self as a ECCE professional and of preschool children 3. Appraise the procedures and techniques to collect the artifacts for portfolio development 4. Evaluate the appropriateness of the data/ artifacts to be included in portfolio of self and child 5. Develop portfolios of self as ECCE professional and preschool children by applying the learned procedures.
19.	20MHDC19	Early Childhood Care and Education - Practical VI	*1.* Understand the curriculum approach, organizational structure and function of the ECE centres *2.* Plan the ECE programme based on the formulated Curriculum framework with the identified approach *3.* Implement the planned programme in day to day activities in the Child Lab and the chosen ECE Centre *4.* Evaluate the executed programme and identify its shortcomings 5. Restructure an effective ECE programme
20.	20MHDC20	Personality Development	1. Identify the forms and determinants of personality and recognize the attributes of personality and personality development 2. Understand the interactions between heredity and environment and among the attributes of personality in personality development 3. Infer the theoretical perspectives of personality and apply its implications in assessment of personality development and personality disorder 4. Evaluate the theoretical perspective and determinants of personality in developing and enhancing one's personality 5. Formulate a framework to show linkages between determinants of personality, theoretical perspective, attributes of personality and personality disorder to come up with a model to enhance knowledge about personality and personality development
21.	20MHDC21	Appraisal of Child, Women and Family Welfare Programmes *(Self study)*	1. Recognize the meaning and concept of welfare programmes in India. 2. Identify various family, women and child welfare programmes and the agencies functioning for the same.

			3. Understand the need and importance of welfare programmes in the development and wellbeing of the people. 4. Analyze the objectives and purpose welfare programmes and its impact on the status of children, women and families 5. Appraise the level of utilization of benefits of the welfare programmes and its impact on the national development.
22.	20MHDM01 -MDC	Perspectives in Marriage and Parenthood (Offered for other departments)	1. Recognize marriage readiness, current trends in marriage and need of counseling 2. Understand Indian marital laws and its applications for legal relationships 3. Appraise the importance of family, relationships, crisis management 4. Evaluate the benefits of family and child in modern era 5. Apply developmental tasks in different stages of family to balance work-family life
23.	20MHDC23	Essentials of Human Resource Development	1. Recognize the need, characteristics and types of Human Resource Development, Human Resource Planning, Training and Development, Performance Appraisal and Career Planning 2. Understand the concept and significance of Human Resource Development, Human Resource Planning, Training and Development, Performance Appraisal and Career Planning 3. Analyze the behavioural bases for Human Resources and the relationship between Human Development and Human Resource Development 4. Evaluate the factors affecting Human Resource Development, Human Resource Planning, Training and Development, Performance Appraisal and Career Planning 5. Design a training module for formulating the behavioural bases of Human Resources
24.	20MHDC24	Life Skills for Quality Living – Practical VII	1. Familiar with the concept of life skills and identify the ten core life skills needed for a healthy and productive life 2. Understand the prominence and employment of life skills to enhance adaptive and positive behaviour in individuals 3. Make practical and realistic use of core life skills in daily life to deal with the demands and challenges of everyday life

			4. Differentiate between life skills and other skills that helps in acquiring coping and self-management skills to promote health and development 5. Characterize and internalize life skills towards receiving, responding, exploring and translating into actual abilities
25.	20MHDPC1	Emotional Intelligence (Professional Certificate Course)	1. Identify Emotions and understand the importance of EI in Self development. 2. Understanding the physical source of EI to perceive the link between intelligence and performance. 3. Developing a better understanding of EI skills thereby becoming aware of emotions and managing behaviors and tendencies in both personal and social context. 4. Assess the different EI models that contribute to better performance and work-life. 5. Design and implement the EL action plan so as to facilitate a better flow between rational and emotional thinking which in turn enhances the personal competence and social competence.
26.	-	School psychology	1. Understand Indian model of school psychology and issues at school 2. Learn to know the techniques of basic counseling for student issues in school 3. Identify learning styles of each individual 4. Equip self care skills to improve personality 5. Practice and adopt counseling techniques for mental health and common disorders

M.Phil / Ph.D Human Development			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPHD01/ 19PHHD01	Human Development Research Methods	1. Utilize the knowledge of Human development and apply to the field of research to contemporary problems and real world situation. 2. Critical analysis of the current policies related to human development. 3. Reasoning ability to convert problems in Human development to research questions. 4. Skill to select or develop appropriate tools and to analyze research problem in human development 5. Theoretical interpretation /perspective of the current problem under study

2.	19MPHD02/ 19PHHD02	Advanced Paper in Human Development	1. Recognize the elements of human development and distinguish its influences on development through life span 2. Review factors that influence competencies and performance for emotional health, behaviour and motivation 3. Relate scientific knowledge of development from birth to oldage to understand and work effectively with parents and the communities 4. Evaluate research with a multidisciplinary view that includes dimensions on ECE 5. Appraise research with a interdisciplinary view that comprise scope on personality development and life skills
3.	19MPHD03 /19PHHD03A	Early childhood care and Education	1. Understand the concept, theories and principles of Early Childhood Education 2. Helps students to identify domains of development to create planned curriculum focussing Indian conditions 3. Recognises and able to prepare tools for developmental assessments 4. Prepares students to design and plan developmentally appropriate toys to facilitate stimulating environment 5. Develop/create essential learning materials and environment required for all round development
4.	19PHHD03B	Pregnancy and prenatal development	1. Understand and recognise pregnancy stages, care, complications and treatments during pregnancy 2. Evaluates major challenges during pregnancy and facilitates for healthy development of prenatal stage 3. Prepares students to make their choice of child birth and post-partum period arrangements 4. Appraise the health and nutritional needs of pregnant mother, lactating period respecting traditional and modern practices 5. Apply the knowledge, rituals, spirituality to enhance parenthood and mother-child relationship
5.	19MPHD03C	Middle childhood years - Development and Challenges	1. To identify the significance and characteristics of middle childhood years 2. To Comprehend the theoretical perspectives of middle childhood years 3. To analyze the needs and challenges of middle childhood years

			4. To evaluate the family, parents, teachers and societal involvement in addressing the problems of children in middle childhood years 5. To apply research and formulate meaningful interventions and measures for the development and behaviour of middle childhood years
6.	18PHHD03A	Children with autism	1. Understand the concept of mental health in context of autism and its coexisting and pre-existing factors 2. Recognize the needs of parents with autistic children in relation to adaption and stability 3. Examine the effective intervention strategies and endorse positive mental health to strengthen the health and wellbeing of parents and autistic children 4. Sustain the parents and autistic children for early intervention using appropriate teaching learning methods **5.** Develop an intervention programme to improve quality of life of parents and their families
7.	18PHHD03B	Gerontology – Issues and welfare	1. Identify gerontological background to understand human development and aging 2. Review theories of aging in its biological, psychological and social context 3. Relate theories to science of aging to understand variation in aging, adaption, stability and heterogeneity 4. Appraise the quality of life and wellbeing of the elderly to promote better strengths and adaptations 5. Formulate comprehensive and meaningful interventions and measures for the health and wellbeing of elderly
8.	18PHHD03C	Adolescent Development and Behaviour	1. Recognize the developmental milestones, characteristics and changes of the adolescent period 2. Demonstrate understanding of the theoretical perspectives of adolescent development and behaviour 3. Synthesize various dimensions of the challenges and problems of adolescents and relate it to the intervention strategies 4. Identify the need, types and process of counselling and guidance and determining its impact on the functioning of adolescents in society

			5. Apply research to the understanding of social learning and behavioural challenges of adolescents
9.	18PHHD03D	Adulthood Development and Family Studies	1. To identify and understand the challenges, developmental tasks and adjustments during middle age 2. Examine problems of marriage, family and parenthood in India 3. Implicate the theoretical concept of parenthood and family welfare 4. Meet out the nutritional and health needs of middle age 5. To apply research and formulate meaningful interventions and measures for the welfare of adulthood years

Home Science Extension Education

B.Sc. Rural Development and Sociology			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BRDC01	Rural Development Concept and Dimensions	1. Gain knowledge on fundamental of rural development and community development 2. Knowledge on early experiments conducted in the field of rural development and its outcomes. 3. Understand the type of indicators and index meant for and applies the skill to assess the developmental status of rural area 4. Knowledge and participatory methods in rural development
2.	18BRDC02	Agriculture and Rural Economy	1. Know the meaning and types of economics 2. Knowledge about role of agriculture in rural economy 3. Understand the economic problems and challenges of rural economy 4. Understandability on five year plans agriculture in plans 5. Examine the impact of globalization and rural economy
3.	18BSOC01	Principles of Sociology	1. understanding the rural society, structure and functions 2. Understand the basic concepts – society, community and groups 3. Gain knowledge about social institutions prevalent in society – its types and functions 4. Understand interaction process and the consequences of it 5. Examine the culture and its components and its influence on community
4.	18BSOC02	Sociology of Indian Society	1. Know the basic concept in sociology of Indian society 2. Have knowledge about vedas, ashramas and purusharthas, Hindu forms of marriage and family 3. To understand the values and implications 4. Understand the functional relationship between institution and asanas 5. Understand the relevance for development
5.	18BRDI01	DSE -1 Perspectives of Home Science (Extension)	1. On completion of the course, students will be able to 2. Identify good design, list their goals and values, set their standards 3. Enlist the principles of diet therapy and functioning of food service institutions 4. Comprehend the key aspects of human

			growth and development and realize the importance of mastering developmental tasks of each life span stage 5. Understand the concept of Extension Education and its importance
6.	18BRDC03	Extension Methods and Audio Visual Aids	1. Understand about different extension teaching methods and its uses in rural areas 2. Knowledge about process of communication 3. Understand the various methods and modern media of communications. 4. Skills and development and use of audio visual aids 5. Knowledge of information management and journalistic writing of various information's and also studied their readability.
7.	18BRDC04	Rural Development Programmes	1. Know the basic concepts in rural development and approaches of rural development 2. Knowledge about current rural development programmes 3. Understand various social security programmes for Below Poverty Level families 4. Analyse the programmes for women and children 5. Understand the relevance of development and sustainable development
8.	18BSOC03	Rural Sociology	1. Know the concept, nature and importance of rural sociology 2. Understand the characteristics of rural and urban society difference 3. To understand casteism and untouchability 4. To understand the various rural problems 5. To analyse the rural reconstruction programmes and government initiatives
9.	18BSOC04	Urban Sociology	1. Understand the scope and importance of urban sociology 2. Know the characteristics of rural and urban society and its difference 3. Develop knowledge about city life and its future 4. Gain knowledge on urban problems 5. Understand urbanization and the push and pull factors
10.	18BRDC05	Voluntary Action	1. Acquire the knowledge on voluntary action in past and present functioning in India 2. Understand the characteristic and function of NGO's 3. Ability and guidance to establish NGO 4. Understand social; development efforts by

			different institutions
11.	18BRDC06	Communication for Rural Development	1. Knowledge on concept of communication process 2. Knowledge about media and rural development 3. Understand the skills in development communication 4. Understand mass media. 5. To know about media planning and advocacy
12.	18BSOC05	Agro Tourism and Rural Development	1. Understand the concept and types of agro tourism in rural development 2. Have knowledge about agro tourism 3. Understand the agro tourism management & administration 4. Analyze the Marketing skills for agro tourism 5. To know the financial and accounting aspects
13.	18BSOC06	Industrial Sociology	1. Knowledge on concept and scope of industrial sociology 2. Have knowledge about industrial process, personal management and welfare 3. Understand the industrial bureaucracy and its type 4. Analyze human relations in industrial administration 5. Knowledge of labour welfare and labour welfare legislation
14.	18BSOC07	Leadership	1. Understanding concept, types and styles of leadership 2. Develop the skills and qualities meant for leadership 3. Train the leaders at local governance 4. Become future leader
15.	18BRDI03	DSE III – Computer Application for Rural Development (Extension)	1. Understand the basic operation of computer, its components and terminologies 2. Create files and folders and other programs in computer for easy operation 3. Enhance their aptitude for computer learning and also various digital transactions 4. Competency in use of MS office by using various applications and skills 5. Advocate the role of internet for rural development
16.	18BRDC07	Micro Enterprises for Rural Development	1. Understand the concepts of entrepreneurship & micro enterprise 2. Knowledge about factors influencing entrepreneurship development 3. Know the concept and scope of micro

			enterprises 4. Analyze the institutional support
17.	18BRDC08	Science and Technology for Rural Development	1. Understand the concept and importance of appropriate technology for rural development 2. Understand the opportunities in food processing techniques 3. Explain the methods of recycling household wastes through various indigenous technologies 4. Demonstrate various renewable and non renewable energy sources for energy management 5. Understandability of the appropriate agencies involved in promoting science and technology
18.	18BRDC09	Rural Development Management	1. This programme develops an analytical framework on rural development administration 2. Students are able to understand the organizational structure 3. To know the administrative set up of rural sector 4. To understand the institutions supporting for rural development 5. To advocate the knowledge to the students on rural administration
19.	18BRDC10	E-Extension	1. Acquire knowledge on various ICT tools and familiarity of ICT initiatives in India 2. Establish community information centre 3. Become specialist in ICT in the field of rural development 4. Undertake public and private ICT project in future
20.	18BSOC08	Methods in Social Science Research	1. Understanding the concept of research in rural areas 2. Have knowledge about method of sampling and its merits and demerits 3. Understand the sources of data collection 4. Analyze the classification, tabulation and analysis of data 5. Ability to prepare report on research work
21.	18BSOC09	Social Psychology	1. Know the concept, nature and importance of social psychology 2. Understand the development of perception 3. Have knowledge about attitude formation and measurement of attitude 4. Measuring public opinion 5. Analyse the formation of stereotypes positive and negative stereotypes

22.	18BRDC11	Rural Governance	1. Understand the concept of rural governance 2. Knowledge about micro level planning and its importance 3. Knowledge on history on rural programmes 4. Understand the facts of PR 5. Analyse the concept of three tier system of panchayat raj
23.	18BRDC12	Programme Development and Evaluation	1. Gain basic information about programme planning 2. Conduct situation analysis 3. Identifying felt and unfelt needs in the field 4. Prepare the programme and implement in the village and mobilize the resources 5. Undertake the event management venture in future
24.	18BSOC10	Social Demography	1. Understand the concept, importance of demographic study, Difference between demography and population study 2. Know the sources of population data 3. Have knowledge about demographic variables. Fertility, mortality, migration 4. Analyse the theories of population 5. Examine family welfare programme and population policy
25.	18BSOC11	Social Anthropology	1. Know the meaning, scope of anthropology and relation to other sciences 2. Understand the origin, characteristics and forms of family 3. Have knowledge about evolution and forms of marriage 4. Analyse the types and functions of kinship system 5. Examine tribal religion and magic
26.	18BSOC12	Personality Development (Self Study)	1. Know the concept of personality traits and patterns of personality 2. Understand the reflector factors of personality 3. Knowledge about principles, scope and techniques of personality development 4. Examine the theories of personality 5. Administer the personality measurement test
27.	18BRDC13	Mini Project	1. Know conduct of research in the society 2. Learn documentation and reporting
28.	18BRDC14	Training for Rural Development	1. Gain basic understanding and knowledge on training, its types and techniques 2. Develop the skill on designing a training programme 3. Conduct on campus or off campus training programme 4. Use techniques like brain storming role

			play, organize debate, group discussion and team building 5. Exposure visit to training institute cum centres and establish training centre
29.	18BRDC15	Visual Media for Development	1. Knowledge of concept, types and importance of visual media 2. knowledge about visual materials for communication 3. Understand the technique of visual devices 4. Analyze the types of print media and recent trends 5. Examine role of visual media in rural development
30.	18BRDC16	Community Organisation	1. Understandability of the basic concepts in community organization and community development 2. Knowledge about various methods of community organisation 3. Understand the role of leader in community participatory rural appraisal 4. Analyse the participatory rural appraisal in community organisation 5. Examine the skills of community organisation
31.	18BSOC14	Social Problems	1. Understandability of concept, characteristics, causes of social problems 2. Examine the changes in the functions of family, causes of family disorganization 3. Have knowledge about juvenile delinquency, causes and remedies 4. Analyse concept, nature and impact of abusable drugs, role of family and peer group in drug abuse 5. Learn the causes of terrorism and ways to prevent the same
32.	18BSOC15	Social Welfare	1. Know the characteristics, classifications of entrepreneurship. 2. To acquire knowledge on Idea Generation and Opportunity Assessment 3. To understand about project formulation and appraisal 4. To know about Institutions Supporting Small Business Enterprises 5. To study about Government Policy and Taxation Benefits
33.	18BSOC16	Social Change	1. Understand the concept, characteristics of social change 2. Know the theories of social change 3. Have the knowledge about the factors of social change

			4. Analyse the social progress and value change 5. Examine the impact of urbanization, industrialization and globalization
34.	18BRSV 01	Effective Microorganisms (EM) Technology for Solid Waste Management (Value Added Course)	1. The main outcome of the course is students learnt the technique of EM Technology 2. Students developed kitchen garden in their homes 3. Awareness was created among the students about organic farming and hygiene management practices 4. Understand the need for safe disposal of waste, aware of different methods of safe disposal 5. Learn the EM technology for solid waste management.
35.	18BRD001	NGO Management (Generic Elective Course)	1. Know basic concept of NGO's and types of NGO's 2. Knowledge about various support system for NGO's at national and international level 3. Understand the importance of micro finance and role of micro finance in self help group development 4. Analyse the capacity building of NGO's in problem solving and decision making skills 5. Examine the role of NGO in sustainable development
36.	I8BPSI01/ 18BMUI01/ 18BFHI01/ 18BEC102	Elements of Sociology	1. Know and understand society and the basic concepts of sociology 2. Gain knowledge about social institutions – characteristic and functions 3. Understand interaction process and the consequences of it 4. Explain the types, methods and agencies of social control 5. Examine the culture and its components, difference between culture and civilisation
37.	18BIDI04	Entrepreneurship Development	1. Have the ability to discern distinct entrepreneurial traits 2. Know the parameters to assess opportunities and constraints for new business ideas 3. Understand the systematic process to select and screen a business idea 4. Design strategies for successful implementation of ideas 5. Write a business plan
38.	18BDCGT1	Co-curricular Course on Gandhian Thought	1. Know the life history of mahatma Gandhi 2. Understand the experiments and gandhian constructive programmes

			3. Learn the eleven vows and seven social sins of society
39.	18BSCGP1	Co-curricular Course on Gandhian Philosophy	1. Understand the life history of Gandhiji 2. Know the Mahatma Gandhi's ideals, philosophy and principles 3. Learn satyagraha movement and importance of khadi and village industries.
40.	20BRDCC1	Co-Curricular Course on Folk Dances of Tamil Nadu	1. Acquire the skills to perform folk dances 2. Develop coordination skill and team building capability 3. Manage stress via performing dance 4. Maintain health and body structure

M.Sc. Extension and Communication			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MEXC01	Social Anatomy	1. Know and understand the rural and urban social structure and social stratification 2. Gain knowledge on social institutions and changing trends 3. Know different social groups 4. Examine the agencies of social control 5. Understand the interaction process and the consequences
2.	20MEXC02	Extension Education	1. Know the concept, fundamentals and scope of extension 2. Have knowledge about the principles 3. Understand the classification of extension methods 4. Analyse the audio-visual aids, types, merits and demerits 5. Examine the new initiatives in cyber extension
3.	20MEXC03	Community Development	1. Know the basic concepts of community development 2. Have knowledge about the community development programmes 3. Understand different models of community development 4. Analyse phases of community organization 5. Understand the role of community organizer in community development
4.	20MEXC04	Adoption and Diffusion of Innovation	1. Understand the concept of diffusion of innovations 2. Explore the sustainable communication methods of innovation decision process 3. Adopt the models of communication flows

			and apply in the community 4. Study the types of innovation decisions and apply in a charged situation 5. Acquiring skills to transfer the innovation and study the consequences of innovations
5.	20MEXC05	Panchayat Raj	1. Transformation of 73rd Amendment Act at grassroot level governance 2. Ways and means to approach three tier system of PRI 3. Enhance the effectiveness of Grama sabha and GPDP (Gram Panchayat Development Plan) in rural development 4. Understand the role of government in capacity building of PRI functionaries 5. Inspiration gained through the success stories of PRI in India to become a leader
6.	20MEXC06	Practical I : Training in Grassroot Development Organizations	1. Know the various functions of village panchayat 2. Acquire knowledge on government welfare programmes in the district 3. Understand the functioning of NGO 4. Understand the structure and functions of panchayat union office 5. Students can apply the subject matter knowledge in the field
7.	20MEXC07	Methods and Applications in Rural Planning	1. Gain knowledge on people participation 2. Acquire information of local and micro level planning 3. Know the basics of PRA 4. Train the community to do the exercise 5. Acquiring the skills to mobilize and involving the people in local participation
8.	20MEXC08	Community Health and Nutrition	1. Gain knowledge on food and nutrition and learn determinants of good health 2. Be able to distinguish between communicable and non communicable diseases 3. Gain knowledge on primary health centre its role and function in community health 4. Understand reproductive health, maternal and child health as to how it can affect women's health 5. Know the various policies and programmes relating to community health
9.	20MEXC09	Development Communica -tion	1. Understand the concept, characteristic and goals of development communication 2. Know the role of advertisements, designing advertisements for media – print, audio and video 3. Have knowledge about types and properties

			about images and graphics, study about various software's in industry for still image industry 4. Understand the types, techniques and approaches of advocacy, advocacy planning cycle and advocacy campaigns for different stake holders 5. Build an understanding of the web writing, freedom of expressions and citizen journalism 6. To develop the skill of different media use as communication strategy
10.	20MEXC10	Practical II : Communica -tion	1. Understand the social issues in the field 2. Knowledge in recording and capturing the events 3. Know to write script for radio and documentary movies 4. 4. Enable the Students to do creative group work in the field of social sciences that seeks to equip the students with increasingly sought after skills of understanding, producing and using media in the digital age. 5. Build an understanding of the documentation and documentary movie
11.	20MEXC11	Research Methods and Statistical Applications	1. Understand the fundamental principles of methodology concerning research 2. Expose the students to the tools of data collection 3. Understand organization and representation of data and apply in report writing 4. Explore the various descriptive measures 5. Apply statistical procedure to analyse numerical data and draw inferences
12.	20MEXC12	Mini Project	1. Know the concept, scope of research 2. Enable the students to gain knowledge on different areas of research 3. Understand the scientific methods to study society 4. Analyse the practical knowledge of research and apply the subject matter knowledge in the field 5. Learn the art of reporting
13.	20MEXC13	Programme Planning	1. Understand programme planning and programme planning model 2. Identified the needs of the community and develop a programme 3. Learn the technique of implementing a programme

			4. Monitoring and assessing programme 5. Be able to evaluate the impact of the programme
14.	20MEXC14	Practical III : Field Operation of Rural Development Programmes	1. Analyse the data and identification of needs 2. Understand the environment of the rural area 3. Observation of various programme existing in the adopted area 4. Preparation of plan of work 5. Monitoring and evaluation of the work
15.	20MEXC15	Group Dynamics	1. Know the group norms and structure 2. Understand human behavior – feeling perception and assumption 3. Analyse the group processes 4. Able to manage groups 5. Examine group approaches
16.	20MEXC16	e-Extension	1. Acquire knowledge on various ICT tools and success stories of ICT projects in India 2. Gain knowledge to establish community information centre 3. Become specialist in ICT in the field of rural development 4. Undertake public and private ICT project in future
17.	20MEXC17	Entrepreneurship Development and Management (Open Book)	1. Understand entrepreneurship development, enterprise and its types 2. Understand the techniques of project proposal and SWOC analysis 3. Analyse the gender issues in entrepreneurship 4. Know the business environment and supporting institutions and scheme for entrepreneurs 5. Examine the manager's role and characteristic principles and function
18.	20MEXC18	NGO Management (Self Study Course)	1. Know the basic concepts, nature and scope of NGO's 2. Analyse the sources of funding National and International levels 3. Advocate the students to register and management of NGO's 4. Explain the national and International NGO's and its importance 5. Examine NGO's function at different fields, project evaluation and monitoring
19.	20MEXC19	Internship / Training	1. Enhance skill development 2. Help them to live with community as a whole 3. Identifying the need and help them to solve

			their problems 4. Different job opportunities 5. Understand, advocate and implement rural development programme
20.	20MEXC20	Village Placement Programme	1. Students will be exposed to various rural development institutions 2. Students gain practical knowledge in the field of extension education 3. Students gain confidence and skill to independently work on rural issues 4. Students can understand the professional values and ethics of the extension profession
21.	20MEXI01	Advertisement and Visual Publicity	1. To understand the concept and need for advertisement and visual publicity 2. Describe media and non media in advertisement 3. Explain the functions and techniques of advertisement and the types of printing processes 4. Explain the ethics in advertising and understand the code of advertising standard council of India 5. Assess the use of advertisement as a medium for development communication and its merits and demerits
22.	20MEXM01 (MDC)	Communication for Societal Development Service	1. Understand the need and need and types of communication 2. Assess the different methods of communication 3. Explain the scope of development communication 4. Enable the students to write script for community radio and video 5. Advocate the students to disseminate of messages to rural folk
23.	20MEXPC1 (Professional Certification course)	Entrepreneurship Training and Development	1. Know the characteristics, classifications of entrepreneurship 2. Acquire knowledge on idea generation and opportunity assessment 3. Understand the concept of entrepreneurship 4. Understand about the designing of business proposal 5. Understand the opportunities of e-entrepreneurship
24.	20MEXPC2 (Professional Certification Course)	Social Marketing through Puppetry	1. Students learn the history and origin of puppet in India. 2. The skills learnt will be useful for advertisement and information dissemination

			3. Gain knowledge on traditional art of Tamil Nadu 4. Learn the different skills needed for puppet operation 5. Various types of puppet for different audience 6. Learning the need for voice modulation, team work and puppet operation 7. Understanding the importance of stage preparation, lighting, backdrops and sound systems for effective puppet show.

Master of Social Work			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MSWC01	Social Work Profession	1. Learn the basic concepts of Social Work and related concepts 2. Understand the knowledge about social work models and principles 3. Make out the importance of field work 4. Facilitate the fields of social work 5. Analyze and identify the emerging areas of social work
2.	20MSWC02	Sociology for Social Workers	1. Know the basic concepts of sociology, characteristics of rural and urban society 2. Have knowledge about social process and social control 3. Understand social institutions 4. Explain the functional aspect of social stratification and social change 5. Examine the various social problems and challenges
3.	20MSWC03	Psychology for Social Workers	1. Know the concept of psychology, its relevance to social work profession. 2. Have knowledge about psychological bases for human behaviour 3. Understand the concept of learning and motivation 4. Explain the theories of personality, intelligence and development of emotions 5. Examine the mental health and illness and role of social worker in promoting mental health
4.	20MSWC04	Social Case Work	1. Understand the values and principles of case work 2. Develop the ability to analyze the problems of individuals and factors affecting them 3. Develop appropriate skills and abilities to

			work with individuals 4. Develop skills in using the tools and techniques of case work in the field 5. Identify various issues in practicing social case work
5.	20MSWC05	Social Group Work	1. Understand the basics of social group work 2. Know the theories of group work and group dynamics 3. Understanding the group work process 4. Conceptual clarity on group therapies and the principles behind the application of group work 5. Application of group work practice in various settings in the context of social realities of the country
6.	20MSWC06	Field Work Practicum - I, Rural Camp, Group Project	1. Exposure visits to various NGO‘s/Hospitals/Industries and Social welfare agencies 2. Provide practical knowledge in the field of social work based on the specialization 3. Make them understand the professional values and ethics of the profession 4. Apply the knowledge of social work practice 5. Enable students to work independently applying the knowledge of social work
7.	20MSWC07	Community Organization	1. Know the development of community organization 2. Have knowledge about methods and phases of community organization 3. Develop skills in community organization 4. Explain the application of community organization in different fields 5. Examine social action and social movement and major models
8.	20MSWC08	Social Work Research and Statistics	1. Understand the concepts of Social Work Research 2. Impart knowledge on the process of research 3. Cater informations about sampling frame and data collection techniques 4. Provide knowledge on data analysis and report writing 5. Equip the students with the practical application of statistical tools using SPSS
9.	20MSWC09	Counselling and Guidance	1. Know the basic principles of counselling and its characteristics 2. Impart knowledge on the theoretical bases of counselling

			3. Examine the roles played by counselor and the therapeutic orientations and counseling techniques 4. Practice counselling process in different settings 5. Assess and diagnose the process of counselling
10.	20MSWC10A	Labour Welfare	1. Learn the concepts and issues faced by labour 2. Analyze the scope of labour welfare 3. Deliver the statutory and non statutory labour welfare measures in India 4. Understand the industrial accidents and management systems 5. Know the role and application of social work in industries
11.	20MSWC10B	Medical Social Work	1. Know the practice of medical social work in different settings 2. Analyze the application of medical social work in various disciplines 3. Equip students with broad knowledge of role of medical social worker 4. Develop the practical idea towards the role of medical social workers in rehabilitation services 5. Understand the importance of medical social workers in disease prevention and health promotion
12.	20MSWC10C	Rural Community Development	1. Know the basic concepts and approaches to rural community development 2. Have knowledge about origin and development of rural community development 3. Understand Panchayat Raj before and after independence 4. Analyze the functional relationship between government departments and NGOs 5. Examine the need of training and community development programme
13.	20MSWC11	Field Work Practicum – II	1. Students will be exposed to Social welfare agencies 2. Provide practical knowledge in the field of social work based on the specialization 3. Enable the students to independently work on the field by applying social work models, theories and approaches 4. Understand the professional values and ethics of the profession 5. Apply the integration of practical bases

			with social work practice
14.	20MSWI01	Interdisciplinary Course – Basic Life Skills	1. Define and Identify different life skills required in personal and professional life. 2. Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress. 3. Use appropriate thinking and problem solving techniques to solve new problems. 4. Understand the basics of teamwork 5. Understand the basics of leadership
15.	20MSWC13	Social Welfare Administration, Social Policy and Social Legislations	1. knowledge about nature and the concept of welfare administration 2. understand the methods and fields of social welfare 3. enrich knowledge about Societies Registration and related acts 4. learn the various social policies for different audiences 5. explain the legislations framed for different aspects and its amendments
16.	20MSWC14	Social Work with persons with Disability (Self Study)	1. Understand the prevalence of disabilities and its types 2. Explore the rehabilitative measures for disability 3. Knowledge on rights, conventions and acts for persons with disabilities 4. Know the government measures and programmes for persons with disabilities 5. Analyze the intervention strategies adopted for disabled people at individual, family and community level.
17.	20MSWC15A/	Human Resource Management (or)	1. Explain the concepts and functions of Human Resource Management 2. Make understand the need and process of HR Planning 3. Understand the methods of training and development 4. Know the current trends in Performance Management and Compensation Management 5. Analyze and understand the trends in Human Resource Development
18.	20MSWC15B/	Mental Health (or)	1. Explore the concepts of mental health 2. Know the information about the classification and assessment of mental illness 3. Understand the prevalence and treatment modalities of psychosis 4. Examine the prevalence and treatment modalities of psycho-somatic and other

			psychological disorders 5. Analyze the prevalence and treatment modalities of childhood disorders
19.	20MSWC15C	Urban Community Development	1. Learn the characteristics and concepts of urban community 2. Have knowledge on the concepts of urbanization and urbanism 3. Equip students with the legislations related to urban development and importance of community planning 4. Analyze the role and functions of urban development agencies 5. Exemplify the ongoing urban development programmes
20.	20MSWC16A/	Labour Legislation	1. Know the basic concepts of labour and the legislations 2. Explore the working conditions and safety measures of selected legislations 3. Have knowledge on the welfare measures provided under different industrial legislations 4. Understand the legislations related to wage and salary 5. Analyze the legislations that are related to social security
21.	20MSWC16B	Public Health	1. Know the basic concepts of Public Health 2. Have knowledge on public health and epidemiology of diseases 3. Have knowledge on Health systems development 4. Understand the Health policies and programmes 5. Understand the legislations pertaining to health and Social work approaches in Public health
22.	20MSWC16C	Livelihood Promotion	1. Understand the meaning and relevance of livelihood promotion. 2. Develop insights about the areas of livelihood promotional activities. 3. Analyse various frameworks of the programmes, approaches and models of livelihood promotion. 4. Apply various livelihood intervention methods.
23.	20MSWC17	Field Work Practicum – III	1. Placement of students in NGO's / Hospitals / Industries based on their specialization 2. Practical knowledge in the field of social work based on the specialization 3. Enable the students to independently work on the field by applying social work

			models, theories and approaches 4. To make out understand the professional values and ethics of the profession 5. Apply the integration of practical bases with social work practice
24.	20MSWC19	Human Rights (Open Book)	1. Understand the human rights and its relevance to social work 2. Learn the duties of un declaration of human rights 3. Relate the indian constitution and human rights 4. Analyze the contemporary issues in human rights 5. Examine the application of human rights in the field
25.	20MSWC20	Corporate Social Responsibility & Social Entrepreneurship	1. Understand the concept of CSR 2. Make out the principles of public private partnership 3. Understand social entrepreneurship 4. Analyze the best practices of CSR in different organizations 5. Examine corporate community participation and skills of social worker in CSR activities
26.	20MSWC21A	Industrial Relations and Organisational Behaviour	1. Understand the concept and importance of industrial relations 2. Know the ethical codes of industrial relations 3. Have knowledge about the industrial legislations to deal with industrial problems 4. Analyze the concepts of organizational behaviour 5. Examine the basics of organizational change and development
27.	20MSWC21B	Psychiatric Social Work	1. Know about the mental health problems 2. Understand the importance of individual therapy and its psychological treatment methods 3. Know about the importance of group therapy and its psychological treatment methods 4. Examine the role of psychiatric social worker in different settings 5. Analyze the policies and legislations related to mental health in india and overview about dsm iv
28.	20MSWC21C	Tribal Community Development	1. Understand the Characteristics and administrative structure of rural and tribal community

			2. Understand the rural and tribal problems and applications of social work methods 3. Evaluate the various social movements and central and state government welfare programmes 4. Apply the social work methods in rural and tribal communities
29.	20MSWC22	Field Work Practicum - IV	1. Placement of students in NGO's / Hospitals / Industries based on their specialization 2. Provide practical knowledge in the field of social work based on the specialization 3. Enable the students to independently work on the field by applying social work models, theories and approaches 4. Make them understand the professional values and ethics of the profession 5. Apply the integration of practical bases with social work practice

M.Phil Extension Education			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPEX01	Extension Research Methods	1. Gain knowledge on advanced Research Techniques 2. Expose the students to the tools of data collection 3. Gain skills to critically analyze the types of research 4. Knowledge on Research design 5. Apply statistical procedure to analyse numerical data and draw inferences
2.	19MPEX02	Advanced paper in Home Science Extension and Rural Development	1. Knowledge on conceptual analysis of extension education and rural development 2. Understand the approaches of rural development 3. Analyze the impact of current rural development programmes in the social progress 4. Learn project proposal preparation for rural development, implementation, documentation, reporting and evaluation 5. Assessing thrust areas of research in Extension education
3.	19PHEX01	Extension Research Methods	1. Gain knowledge on advanced Research Techniques 2. Expose the students to the tools of data collection 3. Gain skills to critically analyze the types of research

			4. Knowledge on Research design 5. Apply statistical procedure to analyse numerical data and draw inferences
4.	19PHEX02	Advanced paper in Home Science Extension and Rural Development	1. Knowledge on conceptual analysis of extension education and rural development 2. Understand the approaches of rural development 3. Analyze the impact of current rural development programmes in the social progress 4. Learn project proposal preparation for rural development, implementation, documentation, reporting and evaluation 5. Assessing thrust areas of research in Extension education
5.	19PHEX03A	Social Media and Communication	1. Know the fundamentals of social media 2. Knowledge about the popular social media 3. Understand the social media in family relation and its impact. 4. Understand the Important areas of the social media 5. Know the theories of Social media and communication
6.	19PHEX03B	Communication and Audio Visual Aids	1. Concept of communication process. 2. Knowledge about media and communication technology. 3. Understand the concept of Audio Visual aids. 4. To inquire about the types and applications of Audio and Visual aids 5. Analyzing the process of selection and use of Audio Visual aids.
7.	19PHEX03C	Women and Menstrual Hygiene Management	1. Know about the general conditions of health. 2. Identify the menstrual health and hygiene. 3. Understand the importance of menstruation. 4. Gather knowledge about the menstrual hygiene management. 5. outgain knowledge about the importance and use of sanitary napkins.
8.	19PHEX03D	Women safety measures and management	1. Protect self and helping women in the society from various types of violence against women 2. Practice women safety measures and techniques and disseminating information to women in the community 3. Utilize legal provisions for self protection and utilize for societal benefit

Women's Studies Centre

UG			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BSCWS1	Gender and Empowerment (Co-curricular course)	1. Acquire knowledge on Gender sensitization and gender discrimination. 2. Get sensitized on professional status of women. 3. Import leadership skill and capacity building programmes. 4. Facilitate understanding of the governmental programmes for women empowerment. 5. Acquire knowledge to develop entrepreneurship skills and policies and schemes for women entrepreneurs in India.
2.	20BECWS1	Gender, Technical Education and Employment (Co-curricular Course)	1. Acquire knowledge on Gender sensitization power and inequality and understand the personality types using buggs and myers assessment technique. 2. Understand professional status of women and gender in all fields and gain knowledge on sex discrimination, prejudices and stereotypes. 3. Facilitate understanding of leadership skills, work life balance ,gender difference in academic productivity. 4. Get sensitized on changing trends of women's development, women entrepreneurship. 5. Impact knowledge on government policies and programmes for women welfare.
3.	18BDCWS1	Gender and Education (Co-curricular course)	1. Acquire knowledge, skill to learn women and development. 2. Get sensitized on changing trends of women development in all aspects. 3. Import leadership skills and career for women. 4. Acquire knowledge on legal rights of women. 5. Facilitate understanding of Government welfare policies for women

M.Phil. Women's Studies			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPWS01 /19PHWS01	Research Methodology and	1. Conceptual understanding of feminist theories 2. Understand the history of women's

		Statistics in Women's Studies	movements 3. Understand the social construct of gender 4. Learn methodology to understand the social problems and the related laws for women **5.** Understanding the feminist methodology
2.	19MPWS02/ 19PHWS02	Advanced Paper in Women's Studies	1. Understand and apply the feminist research 2. Examine the diverse types of research design 3. Explore the tools of research 4. Analyzing data and learning appropriate use of statistical application **5.** Learning the structure of interpretation
3.	19MPWS03A	Women in Entrepreneurship	1. Understand the role of skill development in encouraging women entrepreneurship. 2. Discuss successful women entrepreneurs and their philosophies. 3. Comprehend the prospects and challenges of differently abled women entrepreneurs.
4.	19MPWS03B	Women Entrepreneur -ship through e-Business	1. Understand the importance of gender in entrepreneurship 2. Recognize the challenges in women entrepreneurship 3. Identify the success of e business entrepreneurs
5.	19PHWS03A	Women and Health	1. Explore women's health from a bio-psychosocial perspective that includes the biologic, social, cultural and spiritual determinants of health. 2. Describe and debate ethical issues related to health care disparities and access to health care in women. 3. Identify disease states that are specific to women or that affect a disproportionate number of women compared to men and their treatment 4. Explore the delivering services for Cervical Cancer Screening and Pre-Cancer Treatment. 5. Carry out independent research project on cervical cancer.
6.	19PHWS03B	Issues and Problems of Women in India	1. To be competent and confident to practice counselling skills in a therapeutic setup 2. To understand the different models related to women health 3. To understand the counselling methods and health issues of women 4. To understand the mental disorders and psychiatric illness 5. To recognize the sexual health of women
7.	19PHWS03C	Approaches for Prevention, Screening and Early	1. Identify women's health from a bio psychosocial perspective that includes the biologic, social, cultural and spiritual

		Detection of Cancer	determinants of health 2. Understand different types of cancer 3. Learn screening methods for detecting breast cancer 4. Explore different approaches for prevention of breast cancer 5. Know the psychological challenges
8.	19PHWS03D	Management of Premenstrual Syndrome by Self-Restructuring	1. To provide holistic cause of premenstrual syndrome and its associated effects on women 2. To gain exposure towards various avenues such as physiological and psychological factors including bio psychological and socio-cultural aspects associated with PMS 3. To understand and explore stressors affecting women, mental wellbeing and work-life balance 4. To provide appropriate behavioural interventions, coping styles, counselling techniques and transition for wellbeing of women.
9.	19PHWS03E	Menopausal Challenges	1. Understand female reproductive system 2. Conceptual understanding of menstruation 3. Explore various menstrual disorders 4. Learn about the remedial measures 5. Understand the menopausal challenges
10.	19PHWS03F	Effectiveness of Exercises in Managing Dysmenorrhea among Adolescent Girls	1. Explore women's health from a bio-psychosocial perspective that includes the biologic, social, cultural and spiritual determinants of health. 2. Describe and debate ethical issues related to health care disparities and access to health care in women. 3. Identify common menstrual problems states that are specific to adolescent period and their treatment. 4. Explore the delivering services for PMS and their management. 5. Carry out independent research project on PMS.

Food Science and Nutrition

B. Sc Food Science and Nutrition			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BFNC01	Basics of Food Science	1. Knowledge on food groups, food pyramid and understand cooking methods with the application in balanced menu pllaning. 2. Knowledge on nutritive value, understand the cookery concepts and gain skills to process and store cereals, pulses, nuts and oilseeds. 3. Knowledge on nutritional classification, understand the changes in pigments and acquire skills in preserving nutrients and pigments in the processing and storage of vegetables and fruits. 4. Knowledge on nutritive value, understand the cooking quality factors and develop skills in the preparation and storage of milk and egg products. 5. Knowledge on the structure and nutritive value, understand the processing factors and acquire skills in processing and storage of flesh foods.
2.	18BFNC02	Fundamentals of Human Physiology	1. Understand the Structure and Functions of the various organ systems of the body 2. Relate the Structure with Functions of the tissues and organs 3. Comprehend the Mechanism of Action of Organs 4. Relate the Physiology of the human body with Food and Nutritional requirements 5. Recognize the Clinical Symptoms of Nutritional Deficiencies based on anatomical considerations
3.	18BFNC03	Food Chemistry	1. Demonstrate proficiency in understanding physiochemical changes occurring in foods during cooking. 2. Explain the properties and reactions of the various food components. 3. Describe the basic principles and properties of starch proteins, fats and oils, pectic substances and spices and condiments. 4. Gain sufficient knowledge about chemistry of starch proteins ,fats and oils,

			pectic substances. 5. Develop products with minimum nutritional loss based on the knowledge of food chemistry.
4.	18BFNI01	DSE – I - Perspectives of Home Science	1. Enlist the principles of diet therapy and functioning of food service institutions 2. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental tasks of each life span stage 3. Understand the concept of Extension Education and its importance
5.	18BFNC04	Principles of Nutrition	1. Application of the science of nutrients in normal and disease conditions. 2. Able to conceptualize, implement and evaluate the functions, metabolism, requirements and effects of deficiency of nutrients. 3. Understand the role of food and nutrients in health and disease prevention. 4. Evaluate nutrition information based on scientific reasoning for clinical and community application. 5. Development of a balanced diet to improve the general wellness of an individual.
6.	18BFNC05	Food Microbiology	1. Know the different types and morphology of microorganisms and magnification capacity of different types of microscopes. 2. Understand the factors affecting the growth in controlling the growth curve of microorganisms. 3. Able to preserve the perishable foods from different types of microbial spoilage 4. Able to preserve the non-perishable foods from microbial contamination and spoilage. 5. Explore the beneficial effects of microorganisms in the processing and development of fermented foods.
7.	18BFNC06	Principles of Nutrition (Practical I)	1. Know the difference between qualitative and quantitative analytical tests in foods. 2. Understand the identification of different types of sugars, proteins and minerals. 3. Acquire the skills to quantify organic and inorganic components of foods. 4. Able to identify and analyse constituents in foods in a logical sequence of steps of analysis.
8.	18BFNC07	Bakery and	1. An understanding about ingredients

		Confectionery	used for baking and how their characteristics are used to design , formulate and prepare bakery products as well as their nutritional qualities. 2. Gain knowledge about the appropriate preparation, mixing, make-up, baking, decorating and presenting of baked products 3. Describe and apply appropriate sanitation, health and safety practices in baking 4. Demonstrate the safe operation, cleaning, maintenance and storage of baking equipment and utensils 5. Describe and plan to set up a bakery unit
9.	18BFNC08	Bakery and Confectionery (Practical II)	1. An understanding of recipes / formulations used in baking and confectionery. 2. Ability to prepare a variety of baked goods and confectionery 3. Gain skills and ability to select ingredients for baking and pre preparation of the products. 4. Knowledge of factors that affect quality of baked products and confectionery. 5. Develop value added baked products with better nutrition.
10.	18BFNC09	Techniques of Food Evaluation	1. Gain knowledge on the importance of food quality 2. Identify the different characteristics of foods 3. Categorize various methods for evaluating food quality 4. Interpret the evaluation techniques and tests used in analysing food quality 5. Ascertain the role of microorganisms in food quality
11.	18BFNC10	Family Meal Management	1. Comprehend the dietary guidelines in meal planning 2. Acquainted with meal planning for all age groups 3. Enable to familiarize with meal management appreciating the physical and physiological changes of individuals
12.	18BFNC11	Nutrition in Diseases-I	1. Understand the concept, purpose and principles of diet therapy and role and types of dietitians 2. Gain knowledge on the etiological factors and complications, assessment parameters and dietary modifications in obesity and underweight

			3. Learn about the causes, types, biochemical changes, diagnostic tests, glycemic index, acute and chronic complications and dietary management of diabetes mellitus 4. Enumerate on the etiology, complications and dietary modifications of various cardiovascular diseases 5. Delineate various deficiency disorders with respect to their prevalence, causes, symptoms and preventive measures
13.	18BFNC12	Food Processing Techniques	1. Comprehend the nature and properties of foods 2. Understand the principles of the various Food Processing Methods 3. Classify the various Foods based on their Structure 4. Understand the processing methods of different foods 5. Differentiate between Processing of different Food Groups 6. Distinguish between the byproducts of Processing of Different Foods
14.	18BFNC13	Family Meal Management (Practicals III)	1. Develop skills in preparation of various food items using five food groups for a day 2. Apply the knowledge in preparing variety items with various nutrients 3. Developing competence in the management of time, fuel and resources by adopting different cooking methods 4. Understand the basic concept of meal management, meal planning for all age groups
15.	18BFNI06	DSE- IV-Computer Applications in Food Science and Nutrition	1. Gain knowledge on historical developments and computer peripherals in the operation of computers. 2. Acquire the skills in exploring windows applications in development of documents, data analysis in spread sheet and power point presentation 3. Understand the computer networks in efficient utilization of internet and intranet connection in digital communication. 4. Elicit multimedia presentation focussing on utilization of authorizing tools. 5. Able to apply computer applications in meal management practices and explore the nutritional softwares and ejournals in professional and academic endeavours.
16.	18BFNC14	Food Biotechnology	1. Expand the knowledge of food

			biotechnology in relation to genetic engineering and plant tissue culture 2. Understanding the role of enzymes and microbes in food industry 3. Helps to keep abreast on development and applications of biotechnology in food and nutrition 4. Develop newer enzymes for improving the overall nutrition and processability of a product
17.	18BFNC15	Public Health Nutrition	1. Develop comprehensive skills in public health nutrition 2. Become professionals in Public health Nutrition 3. Acquire knowledge in epidemiological aspects 4. Excel in assessment of nutritional status on the community 5. Opportunities in government and NGOs as public health nutritionist
18.	18BFNC16	Nutrition in Diseases-II	1. Learn about etiology, clinical symptoms, diagnosis, treatment and dietary modifications in gastrointestinal diseases 2. Understand the functions, clinical symptoms and damages caused in various liver diseases 3. Enumerate on functions of kidney and the damages, clinical symptoms and dietary modifications of various kidney diseases 4. Categorize fever and food allergy based on their causes and metabolic changes and to plan diet modification 5. Gain knowledge on causes, nutritional care and treatment of cancer and HIV
19.	18BFNC17	Preservation of Foods	1. Understand the role of micro organisms in food spoilage 2. Classify the various types of food spoilage 3. Understand ambient temperature processing 4. Distinguish between high and low temperature processing 5. Differentiate between syruping and brining 6. Distinguish between chemical preservation and fermentation 7. Apply the knowledge/concepts to develop new products with minimal processing for better retention of essential nutrients

20.	18BFNC18	Food Processing and Preservation (Practicals IV)	1. Know the principles of preservation behind the methods of preservation. 2. Understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved fruit products. 3. Acquire skills to formulate fruits based preserved products with value addition for nutritional benefits. 4. Explore the principle of preservation in vegetables based products with nutritive value. 5. Prepare cereals and pulses based preserved products focusing the principle of preservation. 6. Develop new products with maximum retention of essential nutrients
21.	18BFNC19	Nutrition in Diseases (Practicals V)	1. Understand the basic principles involved in planning diets for different disease conditions. 2. Plan and prepare diets to meet out the quality and quantity requirements for specific disease conditions 3. Acquire practical knowledge of therapeutic diet to meet the requirement 4. Gain knowledge in planning and preparing diets for CVD, diabetes, hypertension, peptic ulcer, cancer and the like 5. Understand the calculations of nutritive value for the planned and prepared diet
22.	18BFNC20	Nutrition Education and Counseling (Self Study)	1. Appropriate skills in preparation of nutrition education materials 2. Able to utilize the available different mass communication for nutrition education 3. Identify the right method of mass communication, media and aid for conducting nutrition education 4. Expertise in organizing a nutrition education programme employing the audio visual aids
23.	18BFNC23	Product Development and Marketing	1. Learn the trends and dimensions in food consumption pattern 2. Recall the types of food processing techniques 3. Apply the principles in product development and design 4. Understand the different steps involved in development of food products, testing and evaluation 5. Develop entrepreneurship skills in financial

			and marketing strategies
24.	18BFNC24	Food Safety, Sanitation and Hygiene	1. Understand the national and international programmes and laws on food safety and standards 2. Recognize the role of food handlers, food safety officers and health personnel 3. Master the standards followed for food safety 4. Appreciate the importance of personnel and environmental hygiene
25.	18BFNC25	Food Packaging	1. Understand the concepts of packaging in terms of history, principle and functions 2. Identify the various packaging materials available in the market 3. Gain knowledge on the packaging methods and systems 4. Enumerate the packaging of different food products 5. Ascertain the safety of packages through storage, handling and distribution
26.	18BFNC26	Nutrition for Health and Fitness	1. Understand Concept of Fitness Training 2. Foster Fitness Skills 3. Prevent and Manage Lifestyle related Disorders 4. Utilise exercise in Stress and Health Management 5. Gain the Technical Ability to run Fitness Centres
27.	18BFNC27	Nutraceuticals and Nutrigenomics	1. Understand the developments in the field of nutraceuticals and nutrigenomics. 2. Comprehend the components of functional foods and foods containing nutraceuticals 3. Know the importance of probiotics and prebiotics in human health 4. Understanding the effects of nutrients in molecular level process in the body and the effect of pytochemcials in disease conditions. 5. Articulate and advocate the principle of nutrigenomics in controlling life style diseases.
28.	18BFNC28	Product Development and Marketing (Practicals IV)	1. Identify suitable food groups for developing products 2. Categorize the foods for developing recipes and preserved foods 3. Understand the steps involved in the preparation of a new food product 4. Standardize the developed food product for large scale cooking 5. Learn marketing techniques and launch the

			developed products
29.	18BFNV01	Nutrition and Physical Fitness (VALUE ADDED COURSE)	1. Understand the knowledge related to physical fitness, health and nutrition 2. Develop the skill in practicing aerobics and anaerobic power to enhance the energy capacity 3. Inculcate the management of stress, weight control and other health issues by relaxation techniques 4. Excel as fitness counselor in nutrition and physical fitness centres
30.	18BFNO01	Home Scale Preservation of Fruits and Vegetables Generic Elective (GE) - Course	1. Gain expertise to preserve fruits and vegetables at home scale level 2. Apply the skill in improving the quality of the preserved food products 3. Excel in the field of applying fermentation techniques 4. Enhance the knowledge on usage of sugar, salt and chemicals in fruits and vegetables 5. Become as an entrepreneur in small scale food industries
31.	18 BSCFN1	Bakery and Confectionery (Co-curricular Course)	1. Understand the concept on bakery and confectionery items 2. Demonstrate skillfully the role of various food ingredients used in baking and confectionery. 3. Apply the knowledge about the concepts and principles of baking in their skillful preparation. 4. Apply skills in the preparation of bakery and confectionery items 5. Select and prepare desired confectionery items 6. Design and develop various bakery products

M.Sc. Food Science and Nutrition			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MFNC01	Nutrition through Life Span	1. Assess the nutritional status of the community 2. Identify the nutritional deficiency symptoms among the population 3. Prevent and alleviate nutritional deficiencies 4. Formulate weaning foods, packed lunch and age/activity specific diets adequate in quality and quantity 5. Understand and tackle age specific food related problems and eating behaviours

2.	20MFNC02	Food Microbiology and Food Safety	1. Understand the general morphology of microorganisms and understand the growth inhibiting and promoting factors for microorganisms. 2. Categorize the sources, contamination and type of spoilage in respective food groups and infer suitable presentation techniques. 3. Enumerate food poisoning food borne hazards and food intoxication of microbial origin to ensure food safety. 4. Interpret the different clauses used and applications of safety management in food industry. 5. Define different food laws and regulations for quality management in food industry.
3.	20MFNC03	Community Nutrition and Public Health	1. Gaining knowledge on nutritional programmes and policies overcoming malnutrition 2. Understanding the national, international and voluntary nutritional organizations to combat malnutrition 3. Able to organize community nutrition education programme with the application of computers. 4. Apply immunological intervention programmes to overcome epidemic of communicable diseases. 5. Application of the principles of massive supplementary feeding and food safety during emergency in community
4.	20MFNC04	Research Methods and Statistical Applications	1. Develop understanding on various kinds, objectives, process, design and sampling of research. 2. Design the tools for collection, identify the samples, research methods and framework, interpretation of data with the use of tables and pictorial representations. 3. Assess the numerical data for providing statistical evidences to support the research results. 4. Conduct both qualitative and quantitative research in the fields of food science and nutrition. 5. Enable to become a qualified researcher
5.	20MFNC05	Chemistry of Foods-I	1. Acquire knowledge on the physico chemical changes in food 2. Apply the concepts of food chemistry in food preparation 3. Understand the interaction of food and medium of cooking

			4. Evaluate the role of non-nutritive components in foods 5. Analyse the components of foods in relation to processing and preservation
6.	20MFNC06	Chemistry of Foods-II (Practical)	1. Identify the physico chemical changes in foods 2. Apply the knowledge acquired in food preparation 3. Evaluate the effect of chemical reactions in foods 4. Interpret the food interactions and outcomes. 5. Demonstrate skills in food preparation and develop quality food products
7.	20MFNC07	Physiological Basis for Nutrition	1. Acquire skills in measurement of blood pressure, ECG, grouping of blood 2. Comprehend the role of digestive juices and hormones 3. Enumerate the process of gaseous exchange and urine formation 4. Enumerate the functions and secretion of hormones 5. Understand the structure and functions of nerves
8.	20MFNC08	Food Biotechnology	1. Gain knowledge on the techniques and too genetic engineering 2. Understanding fermentation and applications of enzyme technology in food industries. 3. Analyze plant and animal tissue culture in the production and safety of transgenic plants and animals. 4. Explore microbial metabolic pathways in the production of microbial byproducts. 5. Elucidate the nutritional and safety aspects of implications of biotechnology in foods.
9.	20MFNC09	Post Production Systems (CIA Paper)	1. Understand the various roles of national and international agencies in preventing and reducing food losses. 2. Acquire knowledge about the agent casing food losses and the measures to control the food losses. 3. Learn the different types of the storage of grains, fruits and vegetables - traditional and modern. 4. Understand the importance of the processing of sugar, cereals, pulse, fruit, vegetables and Meat and meat products. 5. Gain knowledge about the processing of oil seed, condiments and spices.

10.	20MFNC10	Analytical Instrumentation for Foods	1. Understand the need for analysis and instrumentation 2. Identify an appropriate technique for analysing specific substances 3. Learn the principles of different instruments used for analysis 4. Have an insight into the advanced techniques in food and nutrient analysis 5. Update knowledge on analytical instruments by visiting laboratories
11.	20MFNC11	Techniques For Clinical Nutrition (Practical)	1. Acquire the knowledge on diagnostic levels of biochemical parameters in blood and urine 2. Understand the clinical significance of levels of biochemical parameters in association with nutritional status 3. Learn the analytical techniques in the assessment of biochemical parameters. 4. Acquire the analytical skills for the estimation of biochemical parameters in blood and urine 5. Acquire the skills on employing the appropriate kit methods for the analysis.
12.	20MFNC13	Therapeutic Nutrition	1. Understand the concept of therapeutic diets and diet counselling. 2. Learn the formulation of different modified diets and feeding techniques 3. Categorize the diseases and disorders for planning suitable diets 4. Prepare diets and calculate nutrient composition for dietary intervention
13.	20MFNC14	Advances in Nutrition- I	1. Comprehend the concepts of Nutrition. 2. Apply the knowledge in professional research on macronutrients 3. Acquire skills to evaluate protein quality 4. Create strategies to improve nutritional significance of macronutrients 5. Develop analytical designs in advanced nutrition research.
14.	20MFNC15	Biomolecules and Intermediary Metabolism	1. Gain basic knowledge about the classification and various aspects of carbohydrate metabolism 2. Describe the classification and oxidative process of lipid metabolism 3. Recognize the structure and metabolism of proteins and specialized structure of proteins 4. Integrate the biosynthesis and degradative pathways of nucleic acids and their disorders 5. Correlate the classification of enzymes and

			enzyme kinetics and isoenzymes of clinical importance
15.	20MFNC16	Food Product Development and Packaging (Open book exam)	1. Know about the production and processing of food. 2. Understand and acquire knowledge on product development. 3. Learn the different types of packaging material. 4. Gain awareness of storage, handling and distribution of packages. 5. Enumerate the marketing of the product.
16.	20MFNC17	Techniques for Experimental Nutrition (Practical)	1. Gain knowledge on the analytical techniques in the nutritional estimation of foods. 2. Understanding of the principles in the estimation of nutritional composition of foods. 3. Acquire analytical skills in the analysis of macro and micronutrient content of foods. 4. Enable to demonstrate the analysis of nutritional quality of foods. 5. Able to identify and analyse the constituents in foods in a logical sequence of steps analysis.
17.	20MFNC18	Functional Foods and Nutraceuticals	1. Gain knowledge on the development of functional foods with the conceptual difference between functional foods and nutraceuticals. 2. Acquire skills to categorize nutraceuticals. 3. Gain awareness on the functional foods and nutraceuticals of biotics origin. 4. Apply the knowledge of functional nature of nutraceuticals and understand the regulatory aspects of functional foods and nutraceuticals.
18.	20MFNC19	Self Study – Food Safety and Security	1. Understand the introduction to food safety and issues in India 2. Enumerate on the functions of national and international organizations for food safety 3. Gain knowledge on safety assessment of food additives and supporting laws 4. Acquire insight on food and nutrition security and globalisation of food system 5. Learn about the food and agricultural policies and safety policies on future foods and recent packaging technologies
19.	20MFNC21	Advances in Nutrition- II	1. Identify the role of micronutrients in health and disease. 2. Associate the inter relationship between vitamins and minerals.

			3. Develop intervention strategies to combat micronutrient malnutrition. 4. Exhibit professionalism in micronutrient research 5. Interpret the significance of gut microbiome in human nutrition
20.	20MFNI01	Interdisciplinary Course Nutritional Management for Lifestyle Diseases	1. Gain knowledge on the basics of foods and nutrition in health and diseases. 2. Acquire skills on nutritional management of lifestyle diseases. 3. Enable to understand the nutritional care and support for metabolic disorders. 4. Obtain knowledge on functional foods and nutritional requirements to prevent lifestyle diseases. 5. Acquire skills to prepare therapeutic diets.
21.	20MFNM01	Multi Disciplinary Course Wellness and Fitness	1. Acquire ability to personalise the approach to health and nutrition 2. Formulate balanced diet for different physical activity levels 3. Tailor aerobic and anaerobic physical activity towards wellness and fitness 4. Prevent and tackle non communicable diseases 5. Experience, practise and promote stress management techniques for health

PG –Diploma Food Science and Nutrition			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PDPN01	Community Nutrition and Public Health	1. Understand the strategies to combat nutritional deficiencies in community. 2. Designing community nutritional education programmes with applications of computers. 3. Analysis of epidemiology in the prevention and mitigation of outbreaking communicable diseases. 4. Creation of safe environment and scheming of emergency feeding programmes, water and food safety operations in the management of disaster and emergencies.
2.	19PDPN02	Principles of Nutrition	1. Determine the energy requirement of various age groups 2. Understand the essentials of nutrients in human nutrition

			3. Knowledge on the malnutritional symptoms of various nutrients 4. Apply the concept of macro and micronutrients rich sources of foods.
3.	19PDPN03	Assessment of Nutritional Status	1. Critically evaluate methodologies for nutritional assessment 2. Describe the current state of epidemiological evidence for relationships of diet to the development of selected diseases 3. Interpret and evaluate epidemiological data in relation to nutrition and health 4. Create a database on nutritional assessment and epidemiology for target groups
4.	19PDPN04	Nutritional Management in Health	1. Knowledge on the concept of RDA, balanced diet, reference men and women in the planning of diet. 2. Understand the growth and developmental changes in the various stages of life span 3. Determine the nutritional requirements for various age groups of humans. 4. Apply the concept of nutrition through life span in dietary modification for various stages of life span.
5.	19PDPN05	Nutritional Management in Diseases	1. Emerge as effective dietitians for clinical conditions. 2. Gain knowledge on etiology of diseases 3. Plan adequate therapeutic diet for disease conditions. 4. Acquire the skills for dietary modifications in hospitals and institutions. 5. Manage communicable diseases with nutritional and therapeutic support
6.	19PDPN06	Diet for Health and Disease Practical	1. Understand the basic principles involved in planning diets for different disease conditions. 2. Plan and prepare diets to meet out the quality and quantity requirements for specific disease conditions. 3. Acquire practical knowledge of therapeutic diet to meet the requirement. 4. Gain knowledge in planning and

			preparing diets for CVD, diabetes, hypertension, peptic ulcer, cancer and the like. 5. Understand the calculations of nutritive value for the planned and prepared diet
7.	19PDPN08	Policies and Programmes in Public Health Nutrition	1. Knowledge on the national nutritional policies and programmes. 2. Understand the role of integrated nutritional programmes in India. 3. Understand the role of health agencies at international and national levels. 4. Skill for planning nutrition intervention programmes at community level. 5. Ability to implement and evaluate public health nutrition programmes.
8.	19PDPN09	Food Safety and Nutrition Security	1. Understand the introduction to food safety and nutrition security issues. 2. Enumerate on the functions of national and international organizations for food safety. 3. Gain knowledge on safety assessment of food additives and supporting laws. 4. Acquire insight on food and nutrition security and globalization of food system. 5. Learn about the food and nutrition security at household and national level.
9.	19PDPN10	Principles of Nutrition- Practical	1. Understand the principles of qualitative and quantitative estimations. 2. Technical knowledge on use and maintenance of analytical equipment. 3. Skilled technicians for analyzing macro and micronutrients
10.	19PDPNE1a	Nutrition Education and Counselling	1. Enable competency as nutrition educators and counselors. 2. Able organizers of nutrition education and intervention programmes. 3. Conceptualize and develop audiovisual aids for nutrition education. 4. Sensitize stakeholders and policy makers towards community upliftment.
11.	19PDPNE1b	Biostatistics and Research Methodology	1. Gain knowledge on data collection tools and techniques in nutritional research

			2. Understand the sampling techniques in the collection of different types of data. 3. Acquire skills to analyse data using differential and inferential statistics. 4. Able to write research reports and articles for publication of research work.

M.Phil/Ph.D. Food Science and Nutrition			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPFN01/ 19PHFN01	Research Methods And Techniques In Food Science And Nutrition	1. Apply advanced knowledge in statistics for experimental and applied nutrition research. 2. Apply different forms of quantitative and qualitative tools and designs in Food Science and Nutrition research. 3. Critically evaluate the methodological designs and select appropriate analytical strategies for research projects. 4. Understand the interpretation and appropriate reporting requirements for statistical data. 5. Understand the concepts of validity and reliability of tools and data and apply them in the research.
2.	19MPFN02/ 19PHFN02	Advances In Food Science And Nutrition	1. To cite the advanced technologies in food and nutrition. 2. To relate human nutrition to maintenance of health and the preven of disease. 3. To excel in evidence based personalized nutrition. 4. Explain nutrient metabolism at the cellular level. 5. To utilize current scientific literature to investigate public health nutrition and validate the use of food and nutrition for community upliftment.
3.	19PHFN03A	Nutrition Intervention for Bone Mineral Density	1. To assess the status of bone mineral density among pre and post menopausal women. 2. To report an effective intervention strategy for improving the status of

			bone mineral density among pre and post menopausal women.
4.	19PHFN03B	Nutritional Intervention for Attention Deficit Hyperactivity Disorder (ADHD)	1. To assess the nutritional and health status of selected ADHD children 2. To educate the Parents about the effect of supplementation and nutrition education. 3. To develop Zinc & Omega-3 Fatty Acids rich supplements.
5.	19PHFN03C	Impact of Nutritional Interventions on the Nutritional status of Khasi and Garo Tribal Adolescent girls (13-19 years) in Meghalaya.	1. Understand the nutritional needs of Garo and Khasi tribal adolescents 2. Comprehend the magnitude of malnutrition among them 3. Enumerate and popularize feasible interventions to alleviate malnutrition
6.	19PHFN03D -	Anaemia in Hypothyroidism	1. Understand the composition of various food stuffs and apply theoretical knowledge in various food preparations 2. Provide adequate theoretical understanding about sensory evaluation and to analyse and interpret sensory evaluation data. 3. Infer biochemical and physiological impairments in disease and to obtain knowledge of dietary factors and dietary management of various disease.
7.	19PHFN03E	Formulation of Recipes with Cardiospermum helicacabum and Effect of Supplementation on Osteoporosis	1. Comprehend the principles of developing food products incorporating herbs 2. Understand the prevalence and methods of assessing osteoporosis 3. Quantify the effect of interventions on the health and nutritional status of osteoporotic women 4. Help the osteoporotic women to manage and alleviate the symptoms of osteoporosis
8.	19PHFN03F	Intervention on Micronutrient Deficiencies	1. Understand the methods of assessing the micro-nutrient deficiencies, nutritional deficiencies prevalent among the college going girls, prevention of nutritional deficiencies with special reference to micronutrient deficiencies, benefits of supplementation and to be able to frame a research design.

9.	19PHFN03G :	Situational Analysis of Triple Burden of Malnutrition and Impact of Personalized Nutritional Education on Nutritional Status of Adolescent Girls (13-18 Years)	1. An initiative for a better nutritional education and food consumption pattern. 2. Interventions of the present study can lead to a better health in adolescent girls. 3. Results of the study can be adopted for developing new policy regarding the adolescent health. 4. The study on personalized nutritional education will pave way for many to develop new methods to assess the personalized nutrition.
10.	19PHFN03H	Millets and Lifestyle Disorders	1. Awareness on millets, Prevalence of millets on various lifestyle disorders, Consumption pattern of millets, Health benefits of millets.

Textiles & Clothing

B.Sc Textiles & Apparel Designing			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BTDC01	Fibre Science	1. Understand the classification of fiber 2. Outline the manufacturing process of cellulosic, protein and synthetic fibers 3. Compare the physical and chemical properties of cellulose, protein and synthetic fibers 4. Identify the natural and man-made fibers 5. Acquire basic knowledge about non conventional fibers
2.	18BTDC02	Yarn Manufacturing	1. Understand various methods of making yarn and terminologies related to it. 2. Gain knowledge about different types of yarns and its properties. 3. Learn steps involved in spinning a yarn. 4. Know on fancy yarns, its properties and its application. 5. Learn the advance spinning systems.
3.	18BTDC03	Sewing Techniques – I(P)	1. Demonstrate the parts and functions of sewing machines and identify the problems and rectify 2. Prepare samples for basic hand stitches 3. Make samples of seams and seam finishes 4. Prepare samples for fullness and plackets 5. Construct different types of necklines and neck finishes
4.	18BTDC04	Fashion Illustration – I(P)	1. Compare the sketches of fashion and normal figure 2. Illustrate the human figures 3. Develop designs suitable for accessories through sketching 4. Modify and incorporate garments to the fashion figures 5. Create and sketch own designs
5.	18BTDI01	DSE - I Perspectives of Home Science (Textiles and Clothing dept.)	1. Identify good design, list their goals and values, set their standards 2. Enlist the principles of diet therapy and functioning of food service institutions 3. Comprehend the key aspects of human growth and development and realize the importance of mastering developmental tasks of each life span stage 4. Understand the concept of Extension Education and its importance

6.	18BTDC05	Sewing Technology	1. Identify the different sewing machines for industry 2. Identify the problems and remedies of sewing machines. 3. Explain the fundamentals of garment manufacture 4. Understand production of garment and various processes involved. 5. Distinguish suitable equipments in garment production.
7.	18BTDC06	Fashion Concepts	1. Describe the fashion concepts with references to the terminology 2. Express the social and psychological reason for fashion changes, fashion cycle and forecasting 3. Outline fashion theories 4. Analyse the contribution of fashion designers to the world 5. Understand fashion business trend and identify the carrier opportunities in fashion industries
8.	18BTDC07	Surface Enrichment (P)	1. Select various tools used for fabric surface enrichment 2. Prepare samples for various hand embroidery stitches 3. Design Ari embroidery samples 4. Make machine embroidery and monogram, carding and couching sample 5. Choose and develop trimmings and decorative items for garments
9.	18BTDC08	Fashion Illustration – II (P)	1. Illustrate different types of sleeve on a croquie 2. Choose the necklines, collars and yokes for different garments on a croquie 3. Relate the trimmings and decoration suitability from different garments through sketching 4. Sketch and apply the fullness on garments 5. Choose and render different weaves and prints on garments
10.	18BTDC09	Weaving Techniques	1. Concept of weaving and parts of loom 2. Classify the looms and types of weaves 3. Analyse the preparation of yarn for weaving 4. Identify the different weave structures produced in a loom. 5. Understand different mechanism of loom in fabric formation

11.	18BTDC10	Textiles and Apparel Designing Process	1. Understand the meaning of design and its types along with the areas to use them 2. Recall principles of design, its types on garment designs and create new variations 3. Know the color, its science, classification, meaning and significance along with the theories 4. Develop new textile designing patterns based on creation of motif, repeating them and on collection of new ideas from various sources of design 5. Apply the design concepts for specific body types
12.	18BTDC11	Pattern Making – I	1. List the types of measurements required and the types of pattern making techniques 2. Demonstrate pattern making, pattern alteration and grading techniques 3. Plan and propose economical pattern layouts with cost efficiency 4. Develop standardized patterns for individual and industrial use 5. Develop the skill needed to become a pattern master
13.	18BTDC12	Textile Dyeing and Printing	1. Explain the preparatory process involved in making fabric ready for wet processing 2. Classify various types of dyes available 3. Gain expertise in natural dye production 4. Demonstrate in the different methods available in printing with special references to hand printing 5. Posses skill in machine printing techniques
14.	18BTDC13	Textile Testing	1. Demonstrate the knowledge gained for fibre testing 2. Apply the methods learnt for physical testing of fibre, yarn and fabric 3. Analyse the quality of textiles 4. Distinguish the textile materials 5. Evaluate properties of dyed fabrics
15.	18BTDC14	Pattern Making – II (P)	1. Label various body measurements needed for garment making 2. Demonstrate the basic pattern procedures through various methods 3. Develop various styles by shifting, combining and distributing of darts 4. Apply pattern grading techniques, to prepare patterns for various sizes 5. Assess the economical pattern placement technique
16.	18BTDC15	Sewing Techniques – II (P)	1. Analyse basic structure of garment details such as sleeves, collars, yokes, pockets,

			skirts 2. Develop various styles of garment details 3. Reconstruct basic patterns' to suit based on fashion trends 4. Integrate the concepts of basic sewing techniques in designing 5. Judge the suitability of various fabrics and trims based on fashion needs/selected design
17.	18BTDI04	DSE III – Computer Applications in Textiles (Textiles and Clothing dept.)	1. Understand the basic of computer, its parts and functioning 2. Know the different software's used in the fashion industry 3. Get hands on experience with Coral draw, TUKA studio and pattern making and adobe photoshop 4. Digitally create designs using the software's 5. Experience the marker planning process digitally
18.	18BTDC16	Textiles and Costumes of India	1. Outline the early development in textiles and costumes 2. Classify the traditional costumes of India 3. Explain the types of traditional textiles of India 4. Choose and utilize traditional accessories in costumes designing 5. Chose traditional embroideries of India
19.	18BTDC17	Draping Techniques	1. Recall the basics of draping 2. Summarize and utilize the tools and equipments used for draping 3. Apply draping techniques in various designs Assess and incorporate the use of fullness in different draping styles 4. Design and develop new garment designs using draping techniques
20.	18BTDC18	Textiles and Apparel Quality Control	1. Identify the quality concepts, characters and importance of quality control in textile industry 2. Explain the quality parameters of textiles and clothing 3. Analyze the quality control and standards for Accessories and garment making 4. Examine quality control in packing and labeling 5. Aware of the quality standards and management system
21.	18BTDC19	Interior Textiles	1. Recall the concepts of interior textiles 2. Explain the methods for maintenance of interior textiles 3. Choose the right material for furnishings 4. Determine the types of linens available

			5. Improve the novelty in furnishings
22.	18BTDC20	Textile Dyeing and Printing (P)	1. Understand the need for fabric preparatory processing 2. Demonstrate various dyeing methods 3. Explain various hand printing methods 4. Conduct experiment using natural dyes and mordant's 5. Skill in application of different types synthetic dye
23.	18BTDC21	Kid's Apparel (P)	1. To recall pattern drafting methods to draft pattern for kid's apparel 2. To classify different kid's apparel based on gender, occasion and fabric 3. To design and choose various styles for sewing 4. To estimate the material requirement through economic pattern layout and cost calculation 5. To construct fashion garment for kids.
24.	18BTDC22	Knitting	1. Understand knitting terminologies 2. List the features of knitting machine and compare types of knitting needles 3. Classify knitting 4. Evaluate different types of finishes given to knitted fabric 5. Analyse different methods of maintaining knitted fabrics
25.	18BTDC23	Apparel Merchandising	1. Explain role and responsibilities of merchandiser and Concept of merchandizing in the apparel industry 2. Evaluate sourcing, supply chain management, and resource planning 3. Categorise types of merchandising 4. Understand merchandise planning and management 5. Analyse the Procedure involved in the export of apparel
26.	18BTDC24	Eco Fashion	1. Define the need for eco- fashion market 2. Distinguish eco - labeling schemes followed in categorizing textile goods 3. Summarize the utilization of eco- friendly materials used in fashion 4. Name various eco- fashion designers and their contribution 5. Determine the methods of up- cycling textiles
27.	18BTDC25	Entrepreneurship Development	1. Relate various concepts of entrepreneurship 2. Identify steps involved in project formulation and execution 3. Choose among various Institutional support

			4. Develop ideas related to small scale industry with good quality standards 5. Compare different types of market to launch their innovative products
28.	18BTDC26	Computer Aided Apparel Designing (P)	1. Find, interpret and utilize the drawing tools in CAD 2. Design and develop motifs for printing and embroidery 3. Invent logo and label designs for apparel industry 4. Develop different weave patterns 5. Create women's, kid's and men's garments using CAD
29.	18BTDC27	Women's Apparel (P)	1. Relate pattern making with the drafting of women's apparel 2. Adapt suitable design and garment features for women's apparel 3. Choose suitable materials and layout for the adapted design 4. Calculate the fabric required for specific garment design 5. Construct various garments for women
30.	18BTDC28	Textile Crafts (Self Study)	1. Understand and utilize yarn for craft making Make design analysis to introduce a new product 2. Develop appropriate products with textile material 3. Analyze and use relevant technique to develop craft items 4. Create fashionable trimmings and decorative items
31.	18BTDC31	Fashion Accessories	1. To understand different types of bags, belts, shoes and other accessories 2. To analyze the raw materials used and styles for men and women 3. To understand the use of selected fashion accessory for a specific theme 4. To create designs in jewellery and other fashion accessory 5. To demonstrate various methods for skin and hair care
32.	18BTDC32	Textiles and Apparel Care	1. Define wardrobe planning and classify wardrobe for different age groups 2. Explain different sources of water and types of hardness 3. Analyse the types of laundries and procedure for laundering different types of fabrics 4. Identify different types of care labels 5. Classify stains and identify methods of

			removing
33.	18BTDC33	Non-Woven	1. Classify the types of nonwovens 2. Outline the manufacturing process of nonwovens 3. Compare and contrast the features of different bonding methods 4. Analyse different nonwoven structures based on their types 5. Assess the quality of nonwovens on different parameters
34.	18BTDC34	Apparel Retail Management	1. Define and appreciate the significance of retailing in apparel industry 2. Classify various retail formats and segments 3. Identify and selection of suitable location for retail store setting 4. Analyse different pricing methods and strategies in retailing 5. Decide suitable sourcing and promotional method for apparel store retailing
35.	18BTDC35	Fashion Illustration - III (P)	1. Illustrate the garments and accessories suitable for different occasions 2. Choose sketching of right garment for various seasons 3. Apply and render suitable textures for different seasons 4. Imagine the garments and accessories pertinent to inspiration 5. Design the theme based garments
36.	18BTDC36	Men’s Apparel (P)	1. Recall the style aspects of men’s garment based on fashion trend 2. Illustrate designs for men’s outfits 3. Develop patterns for the garment design 4. Formulate economical layouts and propose the suitable fabric for various garment styles 5. Construct various garments for men, incorporating different style aspects
37.	15BSCSE1	Surface Enrichment on Fabric	1. Design patterns for various surface enrichment on textiles. 2. Appropriately use embroidery stitches for textile and apparel products. 3. Use machine embroidery stitches on textiles. 4. Prepare trimmings and decorative items. 5. Surface enrich any textile products and value addition.
38.	18BTDO01	Clothing care	1. Classify fabrics and explain its properties 2. Distinguish hand and soft water and identify methods of softening water 3. Analyze types of laundries and select laundering procedure for different fabrics

			4. Categorize different types of care labels 5. Identify stain and choose the method of removing
39.	18BTDV01	Hand Printing on textiles	1.To understand the basics of printing on textiles 2.To select appropriate materials and methods of hand printing 3.To outline the steps involved in hand printing 4.To design pattern for block, batik and Tie and Dye 5.Develop skills to become an entrepreneur in textile hand printing
40.	18BTDCC1	Hand embroidery	1. Apply skills in selecting embroidery essentials for various fabrics 2. Demonstrate various hand embroidery stitches 3. Select and create hand embroidery patterns 4. Design and develop hand embroidered textiles with decorative trimmings 5. Decorate the given fabric using trimmings

B.Voc Textiles Dyeing & Printing			
S. No	Course Code	Title of the Course	Course Outcome
1.	20VTDC01	Textile Manufacturing	1. At the end of the course the students will be able to: 2. Understand the classification of fiber 3. Gain knowledge about different types of yarns. 4. Explain the basic weaving operations 5. Identify the different weave structures produced in a loom. 6. Comprehend the use of various knitted fabrics.
2.	20VTDC02	Textile Dyes	1. At the end of the course the students will be able to: 2. Classify dyes into different groups 3. Identify different types of dyeing machines and methods 4. Select dye based on different fabrics 5. Gain knowledge in dyeing process 6. Explain the limitations of using various dyes
3.	20VTDC03	Preparatory Process for Dyeing	1. Understand the process sequence in wet processing 2. Classify various types of singeing machines available 3. Gain expertise in desizing process 4. Demonstrate the methods of scouring and

			bleaching 5. Know the significance of mercerization finish
4.	20VTDS01	Skill Training in Textile Dyeing	1. Understand types of dyes and their preparation methods 2. Gain knowledge about dyeing 3. Identify dyes for different fabrics 4. Select suitable dyes for silk 5. Use appropriate methods of dyeing cotton
5.	20VTDC04	Stages of Mechanical Dyeing Methods	1. Know the fundamentals of textile dyeing 2. Select suitable dyeing method for textiles 3. Understand the principles of dyeing machine 4. Classify dyeing machines in textile industry 5. Compare the functions of various dyeing machines.
6.	20VTDC05	Natural Dyes	1. Understand the classification of natural dyes 2. Identify the sources of natural dyes 3. Extract natural dyes using different solvents 4. Compare the different mordanting techniques 5. Analyze the different factors affecting dyeing.
7.	20VTDC06	Entrepreneur -ship Development	1. Relate various concepts of entrepreneurship 2. Identify steps involved in project formulation and execution 3. Choose among various Institutional support 4. Compare different types of market to launch their innovative products 5. Access quality standards of business.
8.	20VTDC07	Dyed and Printed Fabric Care	1. Distinguish hand and soft water and identify methods of softening water 2. Classify soaps and detergents 3. Analyze types of laundries and select laundering procedure for different fabrics 4. Distinguish the types of care labels 5. Identify stain and choose the method of removing
9.	20VTDS02	Skill Training in Natural Dyeing-I	1. Identify natural dye sources 2. Select natural dyes based on colour yield 3. Utilize natural mordants suitably for natural dye 4. Experiment various natural dye extraction methods 5. Assess the dye extracts for its colour depth
10.	20VTDC08	Textile Printing Methods	1. Know the fundamentals of textile printing. 2. Gain Knowledge on the hand printing method 3. Understand the styles and methods in discha printing. 4. Distinguish transfer printing and its qualities.

			5. Know the application of digital prints and suitable end uses
11.	20VTDC09	Basic Sewing Techniques	1. Understand pattern drafting and its principles 2. Gain knowledge about different types of seams 3. Acquire skill in different types of garment components 4. Construct the sleeves and collars using suitable construction techniques 5. Select suitable garment components for apparel construction
12.	20VTDC10	Mechanical Printing Methods	1. Develop skill in machine printing 2. Differentiate different types of printing 3. Explain the various styles developed under each printing style 4. Demonstrate the technique practically 5. Compare different digital printing methods
13.	20VTDS03	Skill Training in Natural Dyeing -II	1. Utilize natural sources and mordants for dyeing 2. Formulate natural dye combinations for dyeing various fabrics 3. Assess the dye absorption of fabrics 4. Estimate the quantity of natural sources required for dyeing 5. Demonstrate the dyeing of non conventional fibers
14.	20VTDS04	Skill Training in Textile Printing	1. Develop designs for different printing styles 2. Translate down knowledge on dyes and its components 3. Illustrate work process of colour matching system 4. Analyze in various printing methodology
15.	20VTDC11	Resist Printing Methods	1. Understand the concept of resist printing 2. Distinguish the uniqueness in each style 3. Gain knowledge in different resist printing process 4. Developing designs for each resist printing methods 5. Outline the ideas of resist printing into products
16.	20VTDC12	Evaluation of Dyed and Printed Textiles	1. Understand the importance of textile testing 2. Analyze the basic parameters of a fabrics 3. Assess the fabrics for various properties 4. Demonstrate the equipments for different textile testing 5. Apply the gained knowledge for assessing the dyed and printed textile fabrics
17.	20VTDC13	Organization of Dyeing and Printing	1. Know the meaning of Entrepreneurship 2. Understand the organization and production

		unit	plan in a printing and dyeing unit 3. Can create layout for a printing and dyeing unit 4. Assess the cost of Production process 5. Procure and setup machineries in the unit
18.	20VTDS05	Skill Training in Batik and Tie Dyeing	1. Understand the concept of batik, tie and dye. 2. Categorize different batik prints and Tie dyeing methods. 3. Select appropriate tools required for batik and tie dyeing. 4. Prepare suitable dyes for Batik and Tie dyeing. 5. Prepare batik and Tie and Dye samples
19.	20VTDS06	Skill Training in Garment Construction-I	1. Design, Draft pattern for children's garments. 2. Gain knowledge in preparing different layouts. 3. Demonstrate the fabric preparation process for construction. 4. Select suitable fabric designs for different types of garments. 5. Construct various styles of garments for children.
20.	20VTDC14	Effluent Treatment	1. Outline the characteristics of effluent generated from different textile processes 2. Analyse different effluent parameters and compare with BIS limits 3. Summarize the different effluent treatment methods 4. Explain the types of bioremediation and its advantages 5. Understand the advanced waste water treatment
21.	20VTDS07	Skill Training in Block and Screen Preparation	1. Acquire skills in design, block and screen development. 2. Understanding the pigment and paste preparation. 3. Gain knowledge in preparing screens and different types of block. 4. Get hands on training in finishing the fabric for good quality. 5. Product developments for house hold apparels.
22.	20VTDS08	Skill Training in Garment Construction-II	1. Know to design draft pattern and construct the Women's and men's garments 2. Gain knowledge in preparing different layouts 3. Demonstrate the fabric preparation process for construction 4. Select suitable fabric designs for different

			types of garments 5. Construct various styles of garments for women and men.
23.	20VTDC15	Eco Textiles	1. Understand the importance of eco- mark and eco- labels. 2. Classify the types of eco- friendly fibers and their properties. 3. Explain various fiber extraction methods. 4. Categorize the eco- friendly textile processing methods. 5. Outline the scope and importance of Eco-Fashion
24.	20VTDS10	Skill Training in Testing of Dyed and Printed Fabrics	1. Analyse the colour fastness of a dyed fabrics 2. Assess the colour fastness of printed textiles 3. Apply the gained knowledge for testing 4. Compare the difference between natural and synthetic dyes. 5. To understand the potentiality of natural dyes
25.	20VTDS11	Skill Training in Entrepreneurship Development	1. Relate the theory with commercial preparation of products 2. Organize resources for product preparation 3. Apply the methods of pricing and branding for products 4. Manage the resources 5. To implement promotional activities

M.Sc Textiles & Fashion Apparel			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MTFC01	World Costumes	1. Understand the uniqueness of historical costumes 2. Distinguish the periodical costumes of men and women with reference to style and fabric 3. Explain the types of accessories of men and women in ancient period 4. Outline the intricate of world art 5. Design fashion garments taking inspiration from ancient costumes
2.	20MTFC02	Textile Production Processes	1. Revise the basic concepts to yarn making 2. Understand the different methods to make yarn 3. Differentiate between the weaving machines 4. Identify weave and selvedge types 5. Prepare samples to understand the concepts studied

3.	20MTFC03	Advanced Textile Processing	1. Understand the fabric preparatory processing and classify dyes 2. Explain the emerging dyeing and printing methods 3. Categorise the different types of textile finishing techniques 4. Apply bioprocessing techniques in textile wet processing 5. Outline the characteristics of textile effluent and its treatment methods
4.	20MTFC04	Research Methods and Statistical Applications	1. Understand the various kinds, objectives, process, design and sampling of research. 2. Encompass adequate knowledge on qualitative and quantitative research techniques. 3. Design the tools for collection, identification of samples, interpretation of data with the use of tables and pictorial representations. 4. Assess the numerical data for providing statistical evidences to support the research results. 5. Enable to become a qualified researcher.
5.	20MTFC05	Fashion Portfolio (P)	1. Draw the silhouettes from prehistoric and ancient era. 2. Combine the rendered fabric design on garment details and sketch the hair styles and accessories. 3. Manipulate the garments for figures taken from photograph. 4. Design and organize various theme based boards. 5. Design, Develop and Construct Garments as per the theme.
6.	20MTFC06	Dyeing and Printing (P)	1. Demonstrate various preparatory processes for cotton and silk. 2. Develop printed samples using various printing techniques. 3. Formulate natural dye extraction from different sources 4. Prepare antimicrobial finished samples using micro and nano encapsulation. 5. Apply different dyes on different types of fabrics.
7.	20MTFC07	Knitting Technology	1. Understand the basic elements of knitting and properties of knitted fabric 2. Explain the mechanism of warp, weft, circular and socks knitting 3. Distinguish warp and weft knitted structures 4. Produce a knit sample in circular knitting

			machine 5. Identify various knit structures.
8.	20MTFC08	Technical Textiles	1. Understand the Scope of Technical textiles in various fields 2. Classify various types of technical textiles and its application 3. Develop different geo, and industrial textile utilizing natural fibers 4. Gain knowledge about the application of various textile fibers in medical textiles 5. Transform the knowledge for fabric preparation in different fields of technical textiles
9.	20MTFC09	Sustainable Textiles and Fashion	1. Create environmental awareness 2. Gain knowledge about sustainable textile and fashion production 3. Explain the bio processing of textiles 4. Adopt sustainable fashion design process 5. Establish insight on developing sustainable fashion product.
10.	20MTFC10	Textile Testing (P)	1. Perform physical testing of fibers, yarns and fabrics 2. Analyse the woven and knitted fabric for comfort properties 3. Assess the serviceability of woven and knitted fabrics 4. Determine the suitability of fibers, yarns and fabrics for various end application 5. Compare and contrast the absorbency and dye ability of various fabrics
11.	20MTFC11	Fashion Accessories (P)	1. Create styles of fashion accessories. 2. Utilize appropriate materials for making accessories. 3. Choose various techniques to construct fashion accessories. 4. Up-cycle textile discards into fashion accessory products. 5. Restyle unused garments into fashion accessories.
12.	20MTFC13	Textile Economics and Marketing	1. Outline the growth and development of Indian textile industry 2. Summarize the organizational structure of various Indian Textile sectors 3. Identify the role of textile associations and organizations 4. Examine and asses the status and trends of Indian textile import-export.
13.	20MTFC14	Clothing Standards and Specifications	1. Analyze the standard available for textile materials. 2. Evaluate the constructional parameters of

			fabrics 3. To understand the principle of measurement of fabric characteristics 4. Analyse the procedure during quality evaluation of fabric and Understand the evaluation of garment quality. 5. To interpret care labelling system for various fabrics and garments.
14.	20MTFC15	Fashion Presentation (Open Book Test)	1. Explain the structure of Indian and global market. 2. Categorize fashion promotion programmes based on various strategies. 3. Classify and assess the visual merchandising methods. 4. Criticize the purpose of fashion shows and fashion shows and fashion forecasting. 5. Analyze the fashion presentation methods.
15.	20MTFC16	Nonwoven Technology	1. Explain the elements of non-woven process. 2. Identify various fibers preparation methods and laying processes in non-woven production. 3. Classify and compare web bonding process in non-woven technology. 4. Categorize the end applications of non-woven products. 5. Utilize and create non-woven product with eco-friendly materials.
16.	20MTFC17	Advanced Fashion Apparel Designing (P)	1. Prepare patterns and construct theme based Girls wear garments 2. Design styles of casual wear garments for boys groups. 3. Create pattern design for different garment styles to men. 4. Choose and construct garments for women's garments 5. Learns specific requirements for persons with special needs.
17.	20MTFC18	CAD for Fashion Apparel (P)	1. Learn the use of tools in computers for textile designing 2. Understand the different methods to design the garments and accessories 3. Develop computer aided designs for kids 4. Identity the techniques to create design board for men and women 5. Prepare a digital fashion portfolio
18.	20MTFC19	Fashion Draping (Self Study)	1. Outline the basic concepts of fashion draping. 2. Apply draping skills in designing garment details.

			3. Analyse the drape details in garment's application. 4. Justify the application of fabrics suitable for draping. 5. Design and Develop new styles of garments.
19.	20MTFC21	Textile Management	1. Explain the Functions of Human Resources Management. 2. Outline the operations and costing procedures followed in textiles industries. 3. Define and justify the management, development and training programmes organized in the textile industry. 4. Categorize appropriate sales forecasting methods 5. Summarize the types of disaster management and the fundamental rights of human
20.	20MTFI01	Fundamentals of Textiles	1. Classify, indentify and outline the basics of fiber 2. Explain the yarn formation and its types 3. Describe the process of manufacturing of different fabric 4. Understand basic textile finishing, dyes and apply suitable dyeing techniques 5. and printing methods. 6. Summarize textile application in different fields
21.	20MTFM01	Eco Friendly Textiles	1. Classify eco-friendly textile fibers and outline newer fiber and its properties. 2. Describe fiber extraction, yarn making and fabric formation. 3. Outline the eco-friendly processing of textiles. 4. Utilise natural resources for eco-friendly dyeing, printing and mordanting. 5. Propose eco fashion and standards

M.Sc Bio Textiles			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MBXC01	Fiber to Fabric	1. Classify fibers and explain fiber properties 2. Compare various spinning methods and yarn properties 3. Understand the principles of draft in weaving 4. Identify and select weave structures for various end applications 5. Produce different types of carded yarns and woven samples

2.	20MBXC02	Textile Biotechnology	1. Classify enzymes and explain the various factors affecting enzyme activity 2. Outline the various enzyme inhibitions and enzyme regulation 3. Summarize extraction, purification and measurement of enzymes 4. Justify eco-friendly textile processing with enzymes 5. Analyze the advantages of enzyme based detergents and explain the enzyme immobilization methods
3.	20MBXC03	Basics of Fashion and Designing	1. Understand the fashion terminologies 2. Identity the process of designing 3. Prepare designs with basic understanding 4. Differentiate between good and bad design 5. Explore the job opportunities after graduation
4.	20MBXC04	Research Methods and Statistical Applications	1. Understand the various kinds, objectives, process, design and sampling of research. 2. Encompass adequate knowledge on qualitative and quantitative research techniques. 3. Design the tools for collection, identification of samples, interpretation of data with the use of tables and pictorial representations. 4. Assess the numerical data for providing statistical evidences to support the research results. 5. Enable to become a qualified researcher.
5.	20MBXC05	Textile Wet Processing (P)	1. Demonstrate the extraction of enzymes from various sources and apply the 2. extracted enzymes for various textile processing 3. Apply suitable dyes on different types of fabrics 4. Print different fabrics using different printing techniques 5. Formulate natural dye extraction from different sources 6. Prepare antimicrobial and fragrance finished fabrics
6.	20MBXC06	Fashion Sketching and Portfolio (P)	1. Reproduce and draw the silhouettes from prehistoric and ancient era. 2. Combine the rendered fabric design on garment details and sketch the hair styles and accessories 3. Manipulate the garments for figures taken from photograph

			4. Design and organize various theme based boards. 5. Design, develop and construct garments as per the theme
7.	20MBXC07	Functional Textiles	1. Identify the different types of functional textiles and their applications in various fields 2. Outline the types of home textiles and agro textiles 3. Explain the geo and filtration textiles 4. Develop medical textile products and understand the different types of dye textiles 5. Identify the role and use of textiles in automobiles
8.	20MBXC08	Textile Processing and Effluent Treatment	1. Understand the need for fabric preparatory processing 2. Explain various dyeing and printing techniques 3. Categorise the different types of textile finishing techniques 4. Outline the characteristics of textile effluent 5. Summarize the different textile effluent treatment methods
9.	20MBXC09	Quality Control	1. Infer and interpret the quality aspects of Textiles 2. Classify the defects based on their causes and rectify them . 3. Analyses and understand the export quality control procedures. 4. Procedure and formalities for Quality Audits 5. Select and plant the tools of quality control in assessing products.
10.	20MBXC10	Pattern Making and Sewing (P)	1. Label various body measurements needed for garment making 2. Demonstrate the basic pattern procedures through various methods 3. Develop various styles by shifting, combining and distributing of darts 4. Apply pattern grading techniques, to prepare patterns for various sizes 5. Assess the economical pattern placement technique
11.	20MBXC11	Textile Quality Testing (P)	1. Understand the physical testing of fibers, yarns and fabrics 2. Analyse the woven and knitted fabric for comfort properties 3. Assess the serviceability of woven and knitted fabrics 4. Determine the suitability of fibers, yarns and

			fabrics for various end application 5. Compare and contrast the absorbency and dye ability of various fabrics
12.	20MBXC13	Sustainable Textiles and Clothing	1. Create environmental awareness 2. Gain knowledge about sustainable textiles 3. Explain the importance and need for eco labeling 4. Categorize the different types of sustainable fashion 5. Acquire knowledge on up cycling textile waste
13.	20MBXC14	Knitting and Nonwoven Technology	1. To explain the elements of non-woven processes. 2. To identify various fibers preparation methods and laying processes in non-woven production. 3. Classify and compare web bonding process in non-woven technology. 4. Categorize the end applications of non-woven products. 5. Utilize and create non-woven product with eco-friendly materials.
14.	20MBXC15	Ethnic Costumes (Open Book Test)	1. Understand the uniqueness of ethnic costumes. 2. Distinguish the ethnic costumes of men and women 3. Explain the types of accessories of men and women in ancient period 4. Outline the intricacies of ethnic textiles and art. 5. Design fashion garments taking inspiration from ethnic costumes
15.	20MBXC16	Apparel Merchandising and Management	1. Outline the concepts of merchandising structures. 2. Assess merchandising planning based on merchandising calendar. 3. Explain financial management strategies in apparel merchandising. 4. List and compare the visual merchandising techniques. 5. Classify the apparel sourcing processes and explain global market trends.
16.	20MBXC17	Computer Aided Fashion Designing (P)	1. Learn the use of computers for designing 2. Understand the different methods to design the garments and accessories 3. Develop a portfolio of designs for kids, men and women 4. Identity the techniques to create design board 5. Prepare a professional digital portfolio

17.	20MBXC18	Apparel Designing and Sewing (P)	1. Recall the pattern drafting techniques for apparels of different age group. 2. Choose appropriate garment details and styles for children and adults. 3. Plan economical layouts for all patterns. 4. Select appropriate material for garment making. 5. Develop skill in sewing different garments. / Interpret the pattern alterations based on designs.
18.	20MBXC19	Fundamentals of Draping (Self Study)	1. Outline the basic concepts of fashion draping. 2. Apply draping skills in designing garment details. 3. Analyse the drape details in garment's application. 4. Justify the application of fabrics suitable for draping. 5. Design and Develop new styles of garments.
19.	20MBXC21	Textile Microbiology	1. Differentiate Prokaryotic and eukaryotic cell structure and Outline the principles of different microscopes 2. Summarize the nutrient requirements for microbial growth 3. Explain the different methods of culturing microorganisms 4. Describe the assay of fermentation products and downstream processing 5. Outline the microbial applications in textile field

M.Phil/Ph.D Textiles and Clothing			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPTC01/ 19PHTC01	Textile Research Techniques and Statistical Application	1. Define research and express its mechanism behind selection and working of research 2. Classify quantitative and qualitative research tools and explain the factors affecting the research results 3. Get to know the survey techniques, software's used in textile research and understand their application 4. Enhance knowledge in preparation of proposal, project and article writing, 5. Expand skills in using the different types

			of data analysis and means of interpreting the results
2.	19MPTC02/ 19PHTC02	Recent Development in Textiles and Clothing	1. Understand the recent trends in fiber, yarn, fabric and garment preparatory processing 2. Classify technical textiles and understand the production techniques 3. Elucidate information about textile sectors and their developments 4. Realize the importance quality analysis and means of quality assurances 5. Gain knowledge about textile organization and research associations
3.	19PHTC03A	Natural Fibers for Technical Textiles	1. Gain knowledge on the natural fibres 2. Acquire skills to extract fibres from natural sources 3. Understand natural fiber processing technologies 4. Comprehend non-woven fabric formation process 5. Experiment the utilization of natural fibres in the field of technical textiles
4.	19PHTC03B	Advances in Natural Dyeing Methods	1. Understand the availability of and the need for eco-friendly textiles 2. Carry out natural dye extractions and characterization scientifically 3. Apply appropriate techniques for dyeing textiles with natural colourants 4. Prepare sustainable textiles with natural colourants 5. Enhance natural dyeing practices of traditional dyersto develop functional textiles.
5.	19PHTC03C	Non-Conventional Fibers and their Application in Home Textiles	1. Understand the importance of non conventional fibers and its extraction processes 2. Recognize the types of fabric formations and their applications. 3. Acquire knowledge in various finishing techniques. 4. Gain knowledge in different application of technical textiles. 5. Study the methods used for quality assessment.
6.	19PHTC03D	Eco-Friendly Fibers and their Applications	1. Understand the importance and uses of eco friendly fibres. 2. Recognize the types of fabric formations and their applications. 3. Understand the methods of natural

			printing paste preparation. 4. Understand the printed fabric testing methods.
7.	19PHTC03E	Natural Colourants for Textile Dyeing	1. Acquire scientific knowledge on natural colourants 2. Gain knowledge on extraction, purification and characterization of natural dyes 3. Apply appropriate techniques for dyeing textiles with natural colourants 4. Understand textile testing methods and eco-testing standards 5. Develop and evaluate eco-friendly functional textiles
8.	19PHTC03F	Ayurvedic Textiles	1. Learn the method of Ayurveda Dyeing and study the best herbs for dyeing Eco - friendly. 2. To understand the techniques of dyeing with natural sources, processing and preparation of Herbal Textiles 3. To study the knowledge in Ayurveda textiles techniques
9.	19TPHTCF03G	Non-Conventional Fibers and their Applications	1. Understand the importance and uses of non conventional fibers. 2. Differentiate the different types of extraction processes. 3. Recognize the types of fabric formations and their applications. 4. Apply the various finishing techniques. 5. Study the methods used to in quality assessment.
10.	19PHTC03H	Functional Finishes for Technical Textiles	1. Extract Natural fibers and analyze their properties. 2. Carry out Natural Dyeing processes. 3. Learn the Functional finishing of textiles. 4. Study the Standard Testing Parameters of Functional and Technical Textiles. 5. Enforce the importance of Technical Textiles

School of Physical Sciences & Computational Sciences

Course Outcomes of Courses offered in UG/PG Programmes

Department of Mathematics

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BMAC01	Analytical Geometry	1. Demonstrate the basic concepts of two dimensional objects. 2. Represent conics in polar co-ordinates. 3. Acquire knowledge of basic properties of three dimensional objects. 4. Visualise the concepts of skew lines. 5. Solve problems related to geometry of two dimension and three dimension.
2.	18BMAC02	Classical Algebra and Theory of Numbers	1. Factorize a number into product of prime numbers. 2. Identify and analyze the roots of polynomials. 3. Transform a given matrix into a diagonal matrix through eigen values and vectors. 4. Demonstrate the properties of congruences. 5. Use Wilson's theorem and Fermat's theorem as the basis for primarily tests and factoring algorithm
3.	18BMAC03	Trigonometry and Laplace Transforms	1. Demonstrate concepts of successive and partial differentiation. 2. Achieve the knowledge of calculating higher order derivatives. 3. Find maxima and minima of functions of two variables. 4. Understand the concept of involute and envelope of curves. 5. Use concepts of calculus to model real world problems.
4.	18BMAI01	DSE I-Mathematical Statistics- I (Mathematics)	1. Acquire basic knowledge of probability. 2. Apply the probability theory in our day-to-day life. 3. Derive probability distribution of random variables. 4. Demonstrate the concept of bivariate two random variables. 5. Apply the knowledge of mathematical expectation random variables.
5.	18BMAC04	Integral and Vector Calculus	1. Evaluate double and triple integrals. 2. Find areas of surfaces and volumes of solids. 3. Use Jacobians to change coordinate systems.

			4. Demonstrate vector differential operators to identify solenoidal and irrotational vectors. 5. Apply integral theorems to evaluate integrals.
6.	18BMAC05	Application of Differential Calculus and Analytical Geometry 3D	1. Demonstrate the knowledge on trigonometric functions and Laplace Transforms. 2. Construct and solve trigonometric equations. 3. Use Laplace transform to solve differential equations. 4. Apply trigonometric and Laplace transform concepts to other fields. 5. Write and communicate the knowledge of trigonometric concepts
7.	18BMAC06	Differential Equations	1. Identify the types of ordinary differential equations. 2. Apply suitable methods for solving first order and second order differential equations. 3. Model practical problems using linear differential equations. 4. Form and solve partial differential equations of first order. 5. Solve Engineering and Physical science problems.
8.	18BMAI02	DSE II-Mathematical Statistics-II(Mathematics)	1. Illustrate the concept of probability distributions. 2. Derive moment generating function, characteristics function and various constants of distributions. 3. Derive the distributions. 4. Apply probability distributions to the variety of problems in various diversified fields. 5. Solve real world problems using Sampling Theory
9.	18BMAC07	Inferential Statistics	1. Discuss various characteristics of estimators. 2. Illustrate different methods of estimation. 3. Understand and apply various concepts related to the testing of hypothesis. 4. Analyze real world problems using test of significance. 5. Illustrate various applications of χ^2 and F distributions in statistics.
10.	18BMAC08	Statics	1. Calculate the resultants of forces and couples. 2. Analyse and solve problems involving frictional forces. 3. Determine the centers of gravity of simple geometric shapes. 4. List out the formulae related to common catenary. 5. Apply the concepts of statics in architectural and structural engineering.
11.	18BMAC09	Practical I-Mathematical programming in ANSI-C	1. Understand and trace the execution of C program. 2. List out branching and looping statements. 3. Use arrays and strings of C language. 4. Design an algorithm for a given problem. 5. Develop a program for simple application of real

			life.
12.	18BMAI03	DSE III- Office Automation (Mathematics)	1. Perform documentation in Ms – Word. 2. Solve problems using functions in Excel. 3. Understand the dynamics of an office environment. 4. Create slides with animation effects. 5. Apply Ms– Access to retrieve data
13.	18BMAC10	Numerical Methods	1. Find the solution for any system of linear equations. 2. Evaluate differentiation and integration with the given data. 3. Use the software (MATLAB) to do numerical calculations in their project work. 4. Understand the intersections of various surfaces and regions and evaluate various measures. 5. Handle matrices and find characteristic roots and vectors.
14.	18BMAC11	Dynamics	1. Derive the characteristics of the motion of a projectile. 2. Analyse the motion under action of central forces. 3. Construct mathematical equations for Simple Harmonic Motion. 4. Determine the moments of inertia of simple geometric shapes. 5. Apply the concepts of dynamics in Astronomy and Engineering.
15.	18BMAC12	Discrete Mathematics	1. Determine the truth value of compound statements. 2. Write statements of English in Symbolic form and vice versa. 3. Test the validity of a given statement formula using Tautology. 4. Apply the concept of lattice in Boolean Algebra. 5. Construct Hasse diagram for a given set with relation
16.	18BMAC13	Abstract Algebra - I	1. Analyse the properties of groups and rings. 2. Apply Lagrange's Theorem to analyze the cyclic subgroups of a group. 3. Explore the concepts of isomorphism and homomorphism for groups and rings. 4. Prove standard theorems in groups and rings. 5. Demonstrate examples for ideals and quotient rings
17.	18BMAC14	Real Analysis - I	1. Recognize the basic properties of Real Number System. 2. Identify closed and open sets in Euclidean Space. 3. Prove standard theorems in Real Analysis. 4. Find adherent points and accumulation points of a given set of real numbers.

			5. Acquire abstract and logical thinking that pervades modern analysis.
18.	18BMAC15	Complex Analysis - I	1. Operate complex derivatives of a function. 2. Determine analyticity of a function using C-R equations. 3. Construct analytic functions. 4. Analyze Bilinear transformations. 5. Apply Cauchy's theorem and Cauchy's integral formula to evaluate integrals
19.	18BMAC16	Statistical Quality Control	1. Understand the basic concepts of quality improvement. 2. Design, use and interpret control charts for variables and attributes. 3. List out the statistical methods used to measure quality characteristics. 4. Explain the process of acceptance sampling. 5. Describe the use of operating characteristic curves.
20.	18BMAC17	Graph theory	1. Find the solution for any system of linear equation. 2. To solve algebraic and transcendental equation. 3. Calculate numerical differentiation of data and functions. 4. To select appropriate numerical methods and apply them in various types of Engineering fields. 5. Apply the knowledge of interpolation in analyzing the data.
21.	18BMAC18	The History of Mathematics (Self Study)	1. Demonstrate Ancient Mathematics. 2. Identify the Indian, Greek, Chinese and Islamic contributions to Mathematics. 3. Understand the developments of Middle Age Mathematics. 4. Be familiar withWomen Mathematicians. 5. Follow up with latest inventions in modern mathematics
22.	18BMAC21	Abstract Algebra - II	1. Apply the Euclidean ring concepts to the Gaussian integers. 2. Analyze finite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces. 3. Utilize the dimension of annihilator concepts to study the system of linear homogeneous equations. 4. Prove standard theorems regarding Euclidean rings, vector spaces and inner product spaces. 5. Compute inner products and determine orthogonality on vector spaces.
23.	18BMAC22	Real Analysis - II	1. Understandthe differentiability of real functions and its related theorems. 2. Produce proper examples for continuous functions.

			3. Distinguish continuity and uniform continuity. 4. Utilize the standard theorems on derivatives. 5. Apply the concept of bounded variation in continuous functions.
24.	18BMAC23	Complex Analysis - II	1. Classify the singularities of a function. 2. Analyze the behaviour of afunction at its singularities. 3. Expand complex functions as Laurent's and Taylor's series. 4. Determine the residues of a function. 5. Apply residue theorem to evaluate integrals
25.	18BMAC24	Operations Research	1. Understand the mathematical tools needed to solve optimization problems 2. Find optimum solutions for transportation problems. 3. Apply assignment algorithm to solve travelling salesman problems. 4. Construct Mathematical models for the real-time situations. 5. Apply optimum sequence algorithm for smooth functioning of an industry.
26.	18BMAC25	Special Functions and Fourier Series	1. Use Beta and Gamma functions to evaluate integrals. 2. Apply Bessel functions in Physics and Engineering. 3. Establish Bessel integrals for Bessel coefficients occurring in Astronomy problems. 4. Express periodic function as a Fourier series. 5. Understand the nature of Fourier series that represent even and odd functions.
27.	18BMAC26	Practical II - MATLAB	1. Understand the basic definitions and properties of graphs. 2. Identify different kinds of special graphs. 3. Apply the concepts of graph theory to relevant fields. 4. Develop mathematical Models using graph theory. 5. Solve real world problems using graph theory.
28.	18BPHI01	Mathematics I for Physics	1. Identify the method to sum the given series. 2. Apply interpolation formula in computational physics. 3. Expand trigonometric functions. 4. Calculate higher derivatives of a product 5. Form differential equation for a given function.
29.	18BPHI02	Mathematics II for Physics	1. Evaluate double and triple integral. 2. Express periodic function as a Fourier series. 3. Solve various types of ordinary differential equations. 4. Compute Laplace transforms and inverse Laplace transforms for a given function.

			5. Apply Laplace transforms to solve differential equations.
30.	18BBCI06	DSE IV - Mathematics for Biological Sciences	1. Demonstrate the various types of sets, functions and relations. 2. Find Eigen values and Eigen vectors of a given matrix. 3. Find solutions for algebraic, transcendental equations. 4. Apply differential equation techniques in scientific field. 5. Calculate various measures of central tendency required to analyze research project.
31.	18BCHI03	DSEII - Classical Mathematics	1. Evaluate the Integrals in scientific models. 2. Diagonalizable the matrix through Eigen values and Eigen vectors. 3. Solve Differential equations in various science fields. 4. Develop the knowledge of finding summation of series. 5. Apply chain rule in working with multi variable functions.
32.	18BITI01	DSE I - Probability and Statistics (for Information Technology)	1. Acquire basic knowledge of probability. 2. Apply the probability theory in our day – to – day life. 3. Interpret the data. 4. Derive various statistical measures. 5. Apply statistical tools in various fields.
33.	18BITI02	DSE II - Discrete Mathematics (For Information Technology Major)	1. Construct truth table of a statement formulae. 2. Test the validity of a given formula using tautology. 3. Demonstrate the basic concepts in graph theory. 4. Identify Eulerian and Hamiltonian graphs. 5. Apply concepts of graph theory in networking.
34.	18BITI04	DSE IV - Operations Research (For Information Technology Major)	1. Understand the mathematical tools that are needed to solve optimization problems. 2. Make decisions in the management of organizations. 3. Identify and interpret the information and data in support of assignments - projects or research. 4. Turn real life problems into formulation of models. 5. Apply the knowledge of game theory for making profit and predict political outcome
35.	18BTMI02	DSE II - Basic Statistics (For Tamil Major)	1. Apply statistical tools in various fields. 2. Derive various statistical measures. 3. Interpret the data through Bar diagrams. 4. Visualize the correlation between the variables. 5. Apply statistical techniques in Management problems.

36.	18BMAO01	Basic Mathematics (Open Course)	1. Use appropriate mathematical tool to solve real world problems. 2. Inculcate the practice of using trigonometric and analytical geometry properties. 3. Ability to interpret some geometric figures and calculate their measures. 4. Develop critical thinking skills including deductive and inductive reasoning. 5. Investigate and model population growth using differential equations.
37.	18BSMC01	Analytical Geometry and Classical Algebra	1. Analyze curves and regions. 2. List out the properties of geometrical figure. 3. Factorize a given number into a product of prime numbers. 4. Apply the properties of congruences and check the divisibility. 5. Analyze and evaluate the roots of polynomials.
38.	18BSMC02	Trigonometry	1. Demonstrate the knowledge on trigonometric functions. 2. Construct trigonometric equations. 3. Solve trigonometric equations. 4. Apply trigonometric concepts to other fields. 5. Write and communicate the knowledge of trigonometric concepts
39.	18BSMC03	Calculus	1. Calculate successive derivatives of a function. 2. Find partial derivative of a function of two or three variables. 3. Describe curvature of a curve at a point on it. 4. Evaluate double and triple integrals and use them in applications. 5. Utilize Jacobian to change variables in evaluating double and triple integrals.
40.	18BSMC04	Discrete Mathematics	1. Connect themselves to theoretical computer science. 2. Construct the truth tables of a statement formula. 3. Test the validity of a given formula using tautology. 4. Utilize the knowledge of Lattice in Boolean Algebra for modeling. 5. Apply the knowledge of Hasse diagram in computer science and Lattice
41.	18BSMC05	Differential Equations and Laplace Transforms	1. Solve application problems modeled by ordinary and partial differential equations. 2. Explore the use of differential equations as models in various applications. 3. Find the Laplace Transforms and Inverse Transforms of functions. 4. Utilize Laplace Transforms for solving differential equations. 5. Evaluate certain integrals using Laplace

			Transforms.
42.	18BSMC06	Vector Analysis	1. Demonstrate vector differentiation in finding gradient. 2. Identify irrational or solenoidal vectors. 3. Apply operators in differentiation of vectors. 4. Evaluate line, surface and volume integrals. 5. Apply integral theorems to evaluate multiple integrals.
43.	18BSMC07	Numerical Methods	1. Find the solution for any system of linear equations. 2. Solve algebraic and transcendental equations. 3. Calculate numerical differentiation for given functions. 4. Select appropriate numerical method and apply them in Engineering and Science fields. 5. Apply the knowledge in analyzing the data.
44.	18BSMC08	Special Functions and Fourier Series	1. Use Beta and Gamma functions to evaluate integrals. 2. Apply Bessel functions in Physics and Engineering. 3. Establish Bessel integrals for Bessel coefficients occurring in Astronomy problems. 4. Express periodic function as a Fourier series. 5. Understand the nature of Fourier series that represent even and odd functions.
45.	18BSMC09	Practical I- Mat Lab	1. Find the solution for any system of linear equations. 2. Visualize any 2-dimensional and 3 dimensional figures. 3. Apply the software (MATLAB) to do numerical calculations in their project work. 4. Understand the intersections of various surfaces and regions and evaluate various measures. 5. Handle matrices and find characteristic roots and vectors.
46.	18BSEI05	Allied IV Basic Mathematical Statistics (Mathematics)	1. Acquire a broad knowledge of probabili distributions. 2. Derive moment generating function a characteristics function of distributions. 3. List out various characteristics of estimators. 4. Understand methods of estimation. 5. Apply tests of significance to real world situations.
47.	18BSMC10	Abstract Algebra – I	1. Demonstrate insight into abstract algebra with focus on axiomatic theories. 2. Analyze relationships between different algebraic structures and their properties. 3. Compare algebraic features of mathematical systems using homomorphisms and isomorphisms. 4. Solve problems using intrinsic properties of these

			structures. 5. Give examples to illustrate properties and relationships
48.	18BSMC11	Real Analysis - I	1. Recognize the basic properties of Real Number System. 2. Identify closed and open sets in Euclidean Space. 3. Prove standard theorems in Real Analysis. 4. Find adherent points and accumulation points of a given set of real numbers. 5. Acquire abstract and logical thinking that pervades modern analysis
49.	18BSMC12	Complex Analysis – I	1. Operate complex derivatives of a function. 2. Determine analyticity of a function using C-R equations. 3. Construct analytic functions. 4. Analyze Bilinear transformations. 5. Apply Cauchy's theorem and Cauchy's integral formula to evaluate integrals.
50.	18BSMC13	Abstract Algebra – II	1. Apply the Euclidean ring concepts to the Gaussian integers. 2. Analyze finite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces. 3. Utilize the dimension of annihilator concepts to study the system of linear homogeneous equations. 4. Prove standard theorems regarding Euclidean rings, vector spaces and inner product spaces. 5. Compute inner products and determine orthogonality on vector spaces.
51.	18BSMC14	Real Analysis -II	1. Understandthe differentiability of real functions and its related theorems. 2. Produce proper examples for continuous functions. 3. Distinguish continuity and uniform continuity. 4. Utilize the standard theorems on derivatives. 5. Apply the concept of bounded variation in continuous functions
52.	18BSMC15	Complex Analysis – II	1. Understand the logical development of complex analysis from its elementary root. 2. Establish the understanding of application to interdisciplinary areas. 3. Acquire mastery in evaluating complicated real definite integrals by applying contour integration. 4. Perceive the physical meaning of complex infinity and its neighborhood. 5. Demonstrate critical thinking by proving mathematical conjectures
53.	18BSMC16	Operations Research	1. Explain the meaning of operations research. 2. Know the various techniques of operations

			research. 3. Apply the techniques used in operations research to solve real life problems. 4. Select an optimum solution with profit maximization. 5. Formulate a real life problem as linear programming problem

M. Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MMAC01	Advanced Algebra	1. Demonstrate knowledge of conjugacy relation and class equation. 2. Apply Sylow theorem to determine the nature of subgroups. 3. Identify the irreducibility of polynomials. 4. Develop the concepts of extension fields. 5. Find the splitting field for a given polynomial.
2.	17MMAC02	Real Analysis	1. Attain a broad knowledge of the real numbers leading to the development of real analysis. 2. Demonstrate the concepts of limits to apply in sequences, series, differentiation and integration. 3. Write rigorous mathematical proofs of basic results. 4. Develop analytical and logical thinking and to make conclusions based on quantitative information. 5. Apply mathematical methodologies to open-ended real-world problems
3.	17MMAC03	Graph Theory	1. Understand the basic definitions and properties of graphs. 2. Identify different kinds of special graphs. 3. Apply the concepts of graph theory to relevant fields. 4. Develop mathematical Models using graph theory. 5. Solve real world problems using graph theory.
4.	17MMAC04	Optimization Techniques	1. Identify the optimization techniques suitable for the real time problems. 2. Determine the inventory level of an industry for the smooth functioning. 3. Estimate the measures of performance of a real system using simulation. 4. Choose appropriate method to solve nonlinear problems. 5. Apply Kuhn- Tucker conditions to identify stationary points of a nonlinear constrained problems.
5.	17MMAC05	Ordinary Differential	1. Solve ordinary differential equations of second

		Equations	and higher orders. 2. Demonstrate series solutions to solve ordinary differential equations. 3. Identify most suitable method for solving differential equation. 4. Model real situations using differential equations. 5. Apply the command of ordinary differential equations in science and engineering.
6.	17MMAC06	Mathematical Statistics-I	1. Understand the concepts of descriptive statistics. 2. Illustrate different applications of statistics. 3. Provide consultancy to industries. 4. Demonstrate the methods of classifications. 5. Apply the concept of correlation and regression analysis in research.
7.	17MMAC07	Complex Analysis	1. Derive Poisson formula and mean value property. 2. Expand Taylor series and Laurent's series for a given function. 3. List out the properties of canonical products. 4. Identify elliptic functions. 5. 5.Apply the concepts of Complex Analysis to engineering and other sciences
8.	17MMAC08	Analytic Number Theory	1. Analyze the results over primes. 2. Examine the behavior of arithmetical functions. 3. Develop bell series for arithmetical functions. 4. Apply the concepts of congruences in scientific problems. 5. Use Quadratic residues and Reciprocity law in mathematical problems.
9.	17MMAC09	Partial Differential Equations	1. Solve linear or non-linear partial differential equation of any order. 2. Analyse the solutions of Laplace equation. 3. Solve homogeneous Heat and wave equations. 4. Familiarize method of integral transforms for PDE problems. 5. Apply the Dirichlet and Neumann boundary value problems in scientific fields.
10.	17MMAC10	Mathematical Statistics-II	1. Acquire a broad knowledge of probability distributions. 2. Demonstrate the types of probability distributions. 3. Find moment generating function and moments of probability density function. 4. Recognize the use of probability distributions in different disciplines. 5. Use the idea of probability distributions in real world problems.
11.	17MMAC11	Problem solving Techniques using C	1. Demonstrate the syntaxes of C language. 2. Design an algorithm for a given problem. 3. Write and execute well-structured programs for simple application of real life.

			4. Implement file operations in C. 5. Identify and comprehend C documentation.
12.	17MMAC13	Topology- I	1. Analyze properties of topological spaces. 2. Construct various topologies on a general set. 3. Correlate the concept of continuity to compact and connected spaces. 4. Appreciate the relation between metric spaces and topological spaces. 5. Generalize the topological concepts to fuzzy and digital topologies.
13.	17MMAC14	Queueing Theory	1. Explain basic concepts of queueing theory. 2. Acquire skills in analysingqueueing models. 3. Compute quantitative metrics of performances for queueing systems. 4. Analyse computer systems and communication network performance. 5. Apply and extend queueing models to real world systems.
14.	17MMAC15	Combinatorics	1. List out the methods of solving Combinatorics problems. 2. Apply the principle of inclusion and exclusion to solve mathematical and statistical problems. 3. Study probability theory using the concepts of generating functions. 4. Enumerate equivalence classes usingPolyas theory. 5. Identify, formulate and solve real time problems using the enumeration techniques
15.	17MMAC16	Advanced Statistical Quality Control	1. Understand the methods for quality improvement. 2. Construct control charts. 3. Illustrate the uses and applications of control charts 4. Demonstrate the concepts of Acceptance Sampling 5. Apply sampling plans in real world problems.
16.	17MMAC17	Advanced Mechanics	1. Identify the static and dynamic characteristics of mechanical systems. 2. Analyze different systems in integrals of motion. 3. Apply Lagrange's and Hamilton's equations in relevant fields. 4. Utilize Hamilton-Jacobi Method in physical science. 5. Explore the theory of canonical transformations and its application to dynamical theory.
17.	17MMAC18	LaTeX (Open Book)	1. Use text formatting commands. 2. Write LaTeX documents containing mathematical equations and symbols. 3. Produce graphs and figures through LaTeX. 4. Prepare power presentation using LaTeX. 5. Create tables and arrays.

18.	17MMAC19	Motivational Concepts of Research in Mathematics (Self Study)	1. Identify the research problems in their thrust area. 2. Process quantitative data collected for research. 3. Demonstrate the statistical methods for classifying data. 4. Write research articles. 5. Apply statistical tools to analyze data.
19.	17MMAC21	Topology- II	1. Categorize the separation axioms. 2. Produce examples for different topological spaces. 3. Prove standard theorems in topology. 4. Appreciate the relation between metric spaces and topological spaces. 5. Apply the topological concepts and constructions to some chosen real world problems.
20.	17MMAC22	Functional Analysis	1. Explain the fundamental concepts of functional analysis in applied contexts. 2. Use elementary properties of Banach space and Hilbert space. 3. Identify normal, self adjoint or unitary operators. 4. Communicate the spectrum of bounded linear operator. 5. Construct orthonormal sets.
21.	17MMAC23	Mathematical Methods	1. Demonstrate Fredholm's first fundamental theorem. 2. Apply Fourier transform to solve problems in physical sciences. 3. Evaluate integral equations of various types. 4. To find solutions of boundary value problems using integral equations. 5. List out problems in calculus of variation
22.	17MMAI01	Mathematical Techniques (Inter Disciplinary Course)	1. Formulate real world problem into linear prograr models. 2. Select an Optimum solution with profit maximizati 3. Find the solution for any system of linear equations 4. Identify and develop operational methodologi improve on organization. 5. Demonstrate suitable numerical methods for interpolation
23.	17MMAM01	Power Course on Quantitative Aptitude (Multi-Disciplinary Course)	1. Communicate mathematical knowledge and understanding. 2. Perform abstract mathematical reasoning. 3. Critically evaluate real life situations. 4. Recognize and appreciate the connection between theory and application. 5. Formulate simple mathematical models.

M.Phil/PhD			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPMA03A	Queueing Systems	1. Acquire the knowledge of Probability distributions 2. Explain basic concepts of queueing theory 3. Analyze the queueing models 4. Obtain the knowledge of computing the performance measures of queueing models 5. Apply and extend queueing models to real world situations
2.	19MPMA03B	Statistical Quality Control	1. Understand the philosophy and basic concepts of Statistical Quality Control. 2. Demonstrate the ability to design, use and interpret control charts for variables and 3. attributes. 4. Apply key methodology of inspection sampling plans in quality assurance. 5. Understand the sampling plans and apply to higher level of research problems. 6. Apply special purpose sampling plans for research based real world problems.
3.	19MPMA03C	Wavelet Analysis	1. Understand the basic concepts of Wavelet Analysis. 2. Apply the concepts of Wavelet analysis in real life. 3. Do the research efficiently in the field of image and signal processing. 4. Perform new ideas using neuroscience in wavelets. 5. Create and analyze new research problems.
4.	19MPMA01/ 19PHMA01	Research Methodology for Mathematics	1. Write the thesis efficiently 2. Apply principles of graph theory in practical situation 3. Learn the concepts of fuzzy set theory 4. Apply the concept of fuzzy sets to real life problems
5.	19MPMA02/19PHMA02	ALGEBRA, ANALYSIS AND TOPOLOGY	1. Access properties of ideals on local rings. 2. Acquire knowledge of Noetherian modules and Artinian modules. 3. Solve problems using lattices. 4. Apply the concepts of Paracompactness in topology and differential geometry 5. Obtain the knowledge of uniting topological sides with Algebraic structure.
6.	19PHMA03A	Bipolar Soft Topological Spaces	1. Acquire basic Knowledge about soft sets, fuzzy soft sets and bipolar fuzzy soft sets. 2. Apply the concepts of soft sets, fuzzy soft sets

			and bipolar fuzzy soft sets to real life problem. 3. Apply the concepts of soft topological spaces and fuzzy soft topological spaces for research works. 4. Formulate research problems using various soft sets. 5. Write the thesis efficiently.
7.	19PHMA03B	Fuzzy and Neutrosophic Topology	1. Attain basic knowledge of various Fuzzy and Neutrosophic sets 2. Formulate research problems in Fuzzy and Neutrosophic sets 3. Apply the knowledge gained to solve the research problem chosen 4. Solve problems by Coherent analytic methods 5. Bring conclusion of the research work under consideration
8.	19PHMA03C	Generalized closed sets in Topological Spaces	1. Attain basic knowledge of various g – closed sets. 2. Formulate research problems in Λ - generalized closed sets. 3. Apply the knowledge to formulate and solve the research problem. 4. Derive Characterization theorems. 5. Derive conclusion of the research work.

Department of Physics

B.Sc			
S.No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BPHC01	Properties of Matter	1. Analyze and comprehend regarding the strength of the solid materials of different size. 2. Differentiate between the streamline and turbulent flow of liquids and reason out the effects of liquids while flowing 3. Compare the viscosity and interfacial surface tension between the liquids 4. Understand the effect of gravitation on objects and understand the principle of rocket 5. Assimilate and analyze the motion in fluids and express the changes occurring in them in turns of boiling point and freezing point.
2.	18BPHC02	Heat and Thermodynamics	1. Differentiate the terms heat and temperature and measure temperature using thermometer and convert one scale of temperature to another scale. 2. Understand specific heat capacity of gas and the different theories on specific heat capacity 3. Differentiate between principles and methods to produce low temperature, liquefy air, helium and hydrogen 4. Define postulates of kinetic theory of gases and arrive at theorem of equipartition of energy and derive Van der Waal's equation. 5. Define different thermal processes and understand laws of thermodynamics and identify its outcomes
3.	18BPHC03	Practical-I Properties of Matter, Heat and Sound	1. Perform experiments on any material to identify the strength the given objects 2. Deal with liquids based on their viscosity 3. Compare the thermal conductivity of solids 4. Analyze the heat capacity of liquids 5. Comment on the relation between frequency, length and tension of a stretched string under vibration.
4.	18BPHC04	Mechanics and Sound	1. Recognize the motion of the charged particle in electromagnetic field. 2. Describe conservation of energy, work, force, linear momentum and angular momentum 3. Learn the fundamentals of harmonic oscillator model, including damped and forced oscillators 4. Describe the production, detection of ultrasonic waves and applications 5. Explain the absorption and reflection of sound by various materials and describe the requirements for

			good architectural acoustics.
5.	18BPHC05	Optics	1. Distinguish the different types of aberrations and achromatism. 2. Use different types of eyepieces according to their application. 3. Calculate wavelength difference and fringe width from the interference pattern. 4. Explain diffraction pattern and calculate dispersive power of the grating 5. Analyze different types of polarized light.
6.	18BPHC06	Practical-II Properties of Matter, Sound and Optics	1. Conduct experiments on wooden bar and to identify its the strength 2. Test a wire or cylindrical rod for its strength 3. Deal with liquids based on their viscosity 4. Identify information such as purity and concentration of a solution 5. Distinguish first order and second order spectrum
7.	18BPHC07	Electricity and Magnetism	1. Identify the presence of static electric charges and fields due to static charges 2. Possess adequate knowledge to analyze electrical circuits using Kirchoff's laws 3. Understand the phenomena of Seeback effect and apply the concept of thermo-emf wherever suitable 4. Distinguish between different types of magnetic materials and different kinds of magnetism manifested in materials 5. Analyze magnetic properties of a ferromagnetic solid by analyzing or recording its hysteresis behavior
8.	18BPHC08	Mathematical Physics	1. Understand vector calculus in three dimensions and derive Gauss theorem, Stoke's theorem and Green's theorem. 2. Derive Curvilinear coordinates and differential operators in cylindrical and spherical coordinates. 3. Apply special function to solve integral. 4. Understand Newtonian, Lagrangian and Hamiltonian mechanics. Compare Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics and derive it's outcomes.
9.	18BPHC09	Practical-III Optics, Electricity and Magnetism	1. Demonstrate the effect of magnetic field on current carrying conductors 2. Examine the effect horizontal component of earth's magnetic field on magnetic materials 3. Calibrate a voltmeter or ammeter 4. Analyze the effects of refractive index of a medium using optical instruments 5. Predict the curvature of a transparent medium
10.	18BPHC10	Atomic Physics and Spectroscopy	1. Understand the emergence of quantum concept 2. Distinguish between different photodevices and

			working 3. Understand different atom models 4. Analyse the prerequisite in a molecule towards its Rotational and vibrational activity 5. Understand the laser action phenomena, properties of laser
11.	18BPHC11	Electromagnetism	1. Distinguish between magnetic effect of electric current and electromagnetic induction and to apply the related laws in appropriate circumstances 2. Demonstrate magnetic field of electric current/ electromagnetic induction through proper understanding 3. Compare the principles and working of different types of galvanometer 4. Apply and analyze the behaviour of ac/ dc circuits based on L,C and R 5. Understand the unification of electric and magnetic fields and Maxwell's equations governing EM waves
12.	18BPHC12	Practical - IV Optics, Electricity and Magnetism	1. Measure the thickness of thin material using optical means 2. Determine the wavelength of Mercury spectrum 3. Estimate the specific resistance of any conductor 4. Calibrate a High range voltmeter 5. Analyze frequency response of RLC circuit.
13.	18BPHI05	Computer Applications for Physics	1. Compile word document independently along with usage of access for generation of multiple end user. 2. Preparation of spread sheet and working with multiple data. 3. Execution of simple 'C' Programme. 4. Assimilate knowledge on working of internet. 5. Hands on experience with MS Office and 'C' Programming.
14.	18BPHC13	Geographic Information System	1. Comprehend the history and applications of GIS 2. Formats of spatial and non spatial data and associated attributes 3. Define different data models 4. Analyze sources of errors and correct errors 5. Have knowledge regarding the hardwares related to data acquisition
15.	18BPHC14	Materials Science	1. Know about various types of bonding. 2. Distinguish between various types of crystal imperfection. 3. Explain the basics of crystal growth. 4. An idea about basics of thin film technology and few deposition methods. 5. Describe nondestructive testing methods and its applications.
16.	18BPHC15	Solid State Physics	1. Explain symmetry elements and Bravais lattice 2. Distinguish between crystalline and amorphous

			solids, calculate atomic packing factor for Cubic structure. 3. Analyze the success and failure of free electron theory, the origin of band gap and Hall effect. 4. Distinguish between different types of magnetic materials 5. Explore different kinds of polarization and its effects on dielectric constant and refractive index.
17.	18BPHC16	Electronics	1. Have basic knowledge of semiconductor diode, rectifier and filter circuits. 2. Understand transistor biasing and working principle of Amplifiers. 3. Explain feedback and oscillatory circuits. 4. An idea about Multivibrators and operational amplifiers. 5. Comprehend the operation and characteristics of FET, MOSFET, SCR and UJT.
18.	18BPHC17	Practical- V Electronics and Digital Electronics	1. Explain the characteristics and applications of operational amplifier 2. Construct regulated power supply using IC and Zener diode and draw the regulation curve 3. Interpret the characteristics of a transistor in CB and CE modes 4. Design circuits for RC coupled amplifier and study the frequency response , construct Hartley and Colpitt's Oscillator and measure the frequency of oscillations 5. Verify the truth tables of basic logic gates and universal gates.
19.	18BPHC18	Energy and Environment(Self Study)	1. Comment on various energy sources. 2. Compare the various types of pollution and their control measures. 3. Identify the sources of solid wastes and various methods of disposal. 4. Comprehend the causes, effects and control measures of global warming 5. Conserve Natural resources
20.	18BPHC21	Digital Electronics	1. Conversion between various number systems 2. Employ Logic gates for carrying out logic operations 3. Apply the concept of Boolean laws and employ a Karnaugh Map to reduce Boolean expressions. 4. Design various combinational and sequential circuits using flipflops. 5. Explain different types of memory used in computers
21.	18BPHC22	Nuclear and Particle Physics	1. Explain nuclei properties, compare a drop of liquid with that of a nucleus and understand Shell model 2. Distinguish between principles and working of different types of detectors, counters and

			accelerators. 3. Describe basic radioactivity, calculate half-lives and understand radiation hazards 4. Explain natural and artificial transmutations, calculate Q-value of a reaction, recognize the applications of isotopes 5. Distinguish between the forces of nature, recall the properties of cosmic rays,Classify elementary particles
22.	18BPHC23	Quantum Mechanics and Relativity	1. Calculate the de Broglie Wavelength of a wave associated with the particle,explain the importance of Davisson and Germer and GP Thomson experiments and Heisenberg's Uncertainty Principle and Describe the illustrations 2. Describe wave function and derive the Schrödinger equation and interpret the wave function and eigen value equation. 3. Describe the different types of potentials and derive the solutions of Schrödinger equation for the same 4. Analyze the effects of Relativity by Newtonian and Special Theory of Relativity 5. Explain the gravitational effect using General theory of Relativity
23.	18BPHC24	Communication Electronics	1. Explain the concept of amplitude and frequency modulation 2. Know fundamental of AM radio receiver and superhetrodyne receiver. 3. Compare working principle of single mode and multimode optical fibres. 4. Distinguish Digital modulation (pulse code and Pulse amplitude modulation) types 5. Explain the fundamentals of Antenna, Satellite orbits.
24.	18BPHC25	Microprocessor	1. Explain Microcontroller Architecture. 2. Write simple programs for addition, subtraction, multiplication and division 3. Understand the basic concepts of memory interfacing and circuit 4. Comprehend a suitable Input and Output peripheral 5. Execute simple programmes for temperature control and stepper motor
25.	18BPHC26	Practical -VI Electronics, Digital Electronics and Microprocessor	1. Explain the characteristics and applications of operational amplifier 2. Verify Flip-flop and truth table 3. Design circuits using universal gates such as NAND and NOR 4. Design and verify truth tables of adder, subtractor, parity generator and checker, sum-of-products and product-of-sum

			5. Write mnemonics for simple applications using 8085 microprocessor
26.	18BPHV01	Value Added Course Domestic Appliances Servicing	1. Explain electrical terms used in daily life. 2. Explain Electrical safety measurements. 3. Describe the difference between alternating current and direct current. 4. Apply the knowledge to identify the components used in direct current machines 5. Examine the working of basic household appliances.
27.	20BPHCC1	Co- curricular Course Microprocessor and its interfacing	1. Explain Microprocessor Architecture 2. Write simple programs for addition, subtraction, multiplication and division 3. Understand the basic concepts of memory interfacing 4. Comprehend a suitable Input and Output peripheral 5. Enable to write programs for interfacing peripherals
28.	18BPHO01	Generic Elective Course Everyday Physics	1. Relate Cosmic activity and the environmental effect on the earth's surface. 2. Appraise the importance of Physics in daily life. 3. Correlate technical aspects of devices with respect to the necessity. 4. Review the devices on the technical aspects in the real life. 5. Translate functioning of day-to-day devices into technical view.
Discipline Specific Elective			
29.	18BMAI04	Physics for Mathematics	1. Apply the laws of mechanics and describe the motion of a particle/deduce the forces acting in a particle/system of particles. 2. Explain the postulates of special theory of relativity 3. Apply Lorentz transformation to describe the dynamics of particles in relativistic limit. 4. Distinguish between different types of oscillatory motion and to understand the variation ofamplitude with time under various circumstances. 5. Describe the characteristics of semiconductors on the basis of band theory of solids and working principle of p-n junction diode and solar cells.
30.	18BMAI05	Physics Practical for Mathematics	1. Distinguish between elastic/inelastic and rigid/flexible materials by measuring moduli of elasticity. 2. Apply the principle of potentiometer to determine the potential difference/current flowing between two points. 3. Demonstrate the determination of magnetic moment of a magnet 4. Explain I-V characteristics of a p-n junction diode.

			5. Apply AND/OR/NOT logic operations to solve simple logic circuits.
31.	18BSEI02	Physics for Special Education	1. Apply the laws of mechanics and describe the motion of a particle/deduce the forces acting in a particle/system of particles. 2. Explain the postulates of special theory of relativity 3. Apply Lorentz transformation to describe the dynamics of particles in relativistic limit. 4. Distinguish between different types of oscillatory motion and to understand the variation of amplitude with time under various circumstances. 5. Describe the characteristics of semiconductors on the basis of band theory of solids and working principle of p-n junction diode and solar cells.
32.	18BSEI03	Physics Practical for Special Education	1. Distinguish rigid/flexible materials by measuring moduli of elasticity. 2. Apply the principle of potentiometer to determine the potential difference/current flowingbetween two points. 3. Demonstrate the determination of magnetic moment of a magnet 4. Explain I-V characteristics of a p-n junction diode/ zener diode. 5. Apply AND/OR/NOT logic operations to solve simple logic circuits and describe the formation of Lissajousfigures .
33.	18BCHI01	Physics for Chemistry	1. Analyze different kinds of magnetic materials. 2. Distinguish applications of various types of diodes. 3. Explain the principles of Photocells.. 4. Explain the laser characteristics and Raman Effect. 5. Describe biomedical instruments principle.
34.	18BCHI02	Physics Practical for Chemistry	1. Explain surface tension and interfacial surface tension of liquids. 2. Explain the phenomenon of diffraction and interference of light. 3. Explain the principle of potentiometer. 4. Demonstrate the determination of magnetic moment of a magnet. 5. Solve simple logic circuits.
35.	18BBCI03	Physics for Biochemistry	1. Explain the properties of conductors and gaseous materials at low temperatures. 2. Distinguish different kinds of magnetic materials. 3. Explain the characteristics of semiconductors and X-rays. 4. Describe the characteristics of Laser and different types of Lasers. 5. Explain the concept of Raman effect (based on Classical theory).
36.	18BBCI04	Physics Practical for	1. Explain surface tension and interfacial surface

		Biochemistry	tension of liquids. 2. Explain the phenomenon of diffraction and interference of light. 3. Explain the principle of potentiometer. 4. Demonstrate the determination of magnetic moment of a magnet. 5. Solve simple logic circuits.

M.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	20MPHC01	Mathematical Physics I	1. Apply matrices for solving Simultaneous equations 2. Handle vector operators and understand tensor analysis 3. Apply complex variables to solve problems with complex functions 4. Understand various methods of Probability theory **5.** Learn about group theory
2.	20MPHC02	Classical Mechanics	1. Formulate equation of motion and describe the dynamics of an object under Newtonian, Lagrangian and Hamiltonian formalisms 2. Identify presence of central force and to analyze the motion of planetary objects. 3. Explain the conceptual framework of brackets and use these operators to describe the dynamics of harmonic oscillator 4. Discuss the dynamics of a rigid body **5.** Distinguish between different types of equilibrium and to apply the concept for small oscillation
3.	20MPHC	Laser and Spectroscopy	1. Discuss about the characteristics of LASER, Rate Equation and types of LASER 2. Comprehend working of Optical resonators towards construction of a LASER 3. Analyse the rotational spectra of a molecule 4. Apply IR spectrometry for diatomic and polyatomic molecules **5.** Employ Laser Raman techniques for linear molecules
4.	20MPHC04	Solid State Physics	1. Explain crystal structure and reciprocal lattice concepts 2. Distinguish the types of crystal defects and dislocation 3. Know about diffraction theory and Brillouin zones. 4. Comprehend lattice vibration, Specific heat capacity based on Einstein & Debye model. **5.** Explain crystal growth principles and growth methods
5.	20MPHC05	Advanced Electronics	1. Distinguish various operations of Operational

			amplifier 2. Learn the applications of Op - Amp. as A/D and D/A converters and oscillators 3. Understand the counters and shift registers and their applications. 4. Analyze different types of digital modulation techniques and to measure the band width for the corresponding modulation techniques. **5.** Understand the basics of microprocessor and microcontroller
6.	20MPHC06	Practical I General Physics and Electronics	1. Analyze fiber optic principles using laser 2. Construct the circuits to perform mathematical operations using operational amplifier and other ICs 3. Distinguish the behavior of ultrasound in various liquids 4. Verify the crystallinity 5. Determine the refractive index of liquids
7.	20MPHC07	Quantum Mechanics I	1. Explain the evolution of quantum theory 2. Enumerate properties of operators in quantum mechanics 3. Describe about linear vector spaces, Hilbert space, concepts of basis and operators 4. Solve Schrödinger equations for various potentials and apply to hydrogen atom **5.** Analyze orbital and spin angular momentum matrices and calculate Clebsh-Gordan Coefficient
8.	20MPHC08	Statistical Mechanics	1. Establish the connection between statistics and thermodynamics 2. Distinguish between three types of ensembles and derive their partition functions to explain the behaviour of classical and quantum systems 3. Analyze the classical and quantum statistics 4. Compare the statistical behaviour of ideal Bose gas and Fermi gas **5.** Discuss on heat capacities for gas, solids and understand phase transitions
9.	20MPHC09	Advanced Condensed Matter Physics	1. An idea about free electron theory. 2. Distinguish conductors, semiconductors and Superconductors on the basis of Band theory. 3. Explain Dielectric & Piezoelectric materials using Langevin's and Weiss theory. 4. Describe about Dia and Para magnetism in detail **5.** Understand Ferro and Antiferro magnetism in detail
10.	20MPHC10	Mathematical Physics II	1. Solve first order, second order homogeneous and non-homogeneous equations 2. Deliver mathematical modeling for Physics problems involving partial differential equations 3. Solve differential equation using Laplace transforms 4. Arrive at a solution for partial differential equation

			employing Fourier transform **5.** Apply special functions in solving integral functions
11.	20MPHC11	Practical II General Physics and Electronics	1. Identify thermal conductors/ insulators based on thermal conductivity and discuss the thermal dependence of dielectric solid. 2. Design a basic solar cooker and to analyze its performance 3. Execute progammes using microcontroller/microprocessor 4. Demonstrate Zeeman effect/Millikan's oil drop experiment/Michelson interferometer **5.** Design circuits like encoder/decoder, multiplexer/demultiplexer and voltage controlled oscillator/phase locked loops
12	20MPHC13	Electromagnetic Theory and Electrodynamics	1. Describe various concepts of electrostatics and the importance of Laplace and Poisson's equations in electrostatics 2. Apply the principles of electrostatics to the solutions of problems relating to electric field and electric potential, boundary conditions and electric energy density 3. Explain effects involved in magnetostatics and understand role of differential equations in magnetostatics 4. Describe the propagation of electromagnetic induction in time varying field **5.** Discuss about plane electromagnetic waves and its propagation
13	20MPHC14	Nuclear and Particle Physics	1. Calculate binding energy, describe the applications of semi-empirical mass formula and recognize the importance of spin-orbit interaction through shell model 2. Analyze properties of deuteron and describe the properties of nuclear forces and different interactions such as pp, np, nn 3. Calculate the penetration probability using Gamow theory, understand beta and gamma decay and understand about nuclear reactions 4. Compare different principles used in nuclear detectors and discuss different techniques to measure nuclear half-lives and understand nuclear fission **5.** Analyze whether a reaction involving elementary particles is permitted or forbidden and describe symmetry classification of elementary particles
14	20MPHC15	Quantum Mechanics II	1. Describe time independent perturbation methods and apply those methods to study Stark effect and helium atom 2. Explain time dependent perturbation methods and

			to derive the expression for transition probability 3. Derive Klein-Gordan equation, charge and current densities 4. Distinguish between relativistic and non-relativistic Hamiltonian and derive Dirac equation and its solution **5.** Derive expression for scattering cross section using different formalism, with different potentials
15	20MPHC16	Numerical Methods (Open book)	1. Solve problems using Newton methods and Gauss Jordan methods 2. Solve problems using numerical integration methods 3. Solve problems using numerical differentiation methods 4. Fit curves for a given data **5.** Discuss about the fundamentals of probability distributions
16	20MPHC17	Nanomaterials and Fabrication (Self study)	1. Have an idea of the allotropes of Carbon and Zeolites 2. Exposure to various nanomaterials 3. Describe on types of vacuum pumps and gauges 4. Outweigh merits and demerits of fabricating techniques of nanomaterials **5.** Analyze employability of lithography techniques
17	20MPHC18	Practical III General Physics and Electronics	1. Distinguish between magnetic materials based on susceptibility and analyze the type of conductivity (p/n) of a semiconductor crystal 2. Design and construct electronic circuits for oscillators, amplifiers, regulated power supplies using integrated circuits 3. Explain the effect of electric and magnetic field on the dynamics of an electron 4. Perform analog to digital conversion, digital to analog conversion, stepper motor using microprocessor **5.** Perform interfacing for digital to analog conversion, waveform generation, stepper motor and seven segment LED display using microcontroller
18	20MPHC20	Molecular Spectroscopy	1. Apply Surface Plasmon effect on Raman Scattering 2. Describe the theory of electronic spectra 3. Analyze ESR spectra and photoelectron spectra 4. Explain the principle, instrumentation, and application of Mössbauer spectroscopy **5.** Deliberate influence of magnetic field on nuclear interactions
19	20MPHI01	Interdisciplinary Course LASER and its day-to-day applications	1. Explain the process involved in LASER action 2. Describe unique properties of LASER 3. Discuss the importance of LASER in Medicine 4. Recognize the applications of LASER in Textiles

			5. Explain the uses of LASER in Industries.
20	20MPHM01	Multidisciplinary Course Physics and Life	1. Describe and analyze the philosophical concepts on nature/universe 2. Understand probability/uncertainty through quantum concepts 3. Explain the philosophical concepts of universe 4. Understanding about mind 5. Describe the philosophical concepts of human life in a scientific perspective
21	20MPHPC1	Professional Certification Course Fundamentals of LABVIEW	1. Able to construct front panel window 2. Program Vis 3. Determine errors and handle errors 4. To debug the VI at different situations 5. To document VIs.

M. Phil & PhD			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPPH01/19PHPH01	Research Methodology in Physics	1. Solve equations using numerical methods and understand curve fitting 2. Understand the concepts and functioning behind the characterization techniques of optical methods and microscopic techniques. 3. Understand the electrical properties of materials 4. Understand the thermal stability of materials using TG-DTA and DSC analysis 5. Understand the principle, instrumentation and applications of spectroscopic techniques.
2.	19MPPH02/19PHPH02	Advanced Physics	1. Gain knowledge on Band theory of solids 2. Comprehend about crystallography and crystal growth techniques 3. Knowledge on surface analysis of a material 4. Understand concepts of relativistic quantum mechanics 5. Understand quantization of field

Department of Chemistry

B. Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BCHC01	Basics of Chemistry-I	1. Understanding of the electronic structure of atoms and chemical bonding 2. Know how of purification techniques **3.** Knowledge on chemistry of alkanes and cycloalkanes 4. Theoretical understanding of chemical bonding 5. Knowledge on the behavior of matter in the gaseous state
2.	18BCHC02	Basics of Chemistry II	1. Knowledge on atomic structure and periodic properties of elements 2. Realization of the trends in physical and chemical properties of elements 3. Understanding of chemical structure and reactivity of alkenes, dienes and alkynes 4. Knowledge on the mechanistic chemistry of alkenes, dienes and alkynes 5. Theoretical knowledge of shapes of molecules and hybridization
3.	18BCHC03	Practical-I Basic Laboratory Practices and Inorganic preparations	1. Acquaintance to Inorganic preparations 2. Familiarity of good lab practices 3. Ability to handle analytical balance 4. Know how of simple lab techniques 5. Record writing skills
4.	18BCHC04	Basic Concepts of Chemistry I	1. Ability to distinguish crystal systems 2. Understanding of the structure, reactivity and mechanistic aspects of oxygenated organic compounds 3. Knowledge of the quantum aspects of orbital/ atomic structure 4. Appreciation of the general stages involved in metallurgy 5. Perception of metallic bonding and crystal structure
5.	18BCHC05	Basic Concepts of Chemistry II	1. Understanding of the fundamental concepts of nuclear chemistry and radioactivity 2. Appreciate the significance of radioactive isotopes 3. Understanding of chemical structure and reactivity of carboxylic acids 4. Familiarization on the synthetic uses of reactive methylene compounds 5. Ability to distinguish colloids, gels and emulsions
6.	18BCHC06	Practical-II Quantitative Analysis I –	1. Knowledge on principles and procedure of volumetry 2. Skills in doing volumetric titrations 3. Experience in carrying out various titrimetric

		Volumetry	methods
7.	18BCHC07	Theoretical Organic Chemistry	1. Understanding of the concept of aromaticity 2. Understand the influence of bond polarization on a molecule's structure and reactivity 3. Ability to depict the mechanistic course of a reaction 4. Knowledge on the mechanisms of substitution and elimination 5. Knowledge on the synthesis and reactions of Compounds of Nitrogen
8.	18BCHC08	Thermodynamics I and Solid State Chemistry	1. Knowledge on concepts of solid-state chemistry and crystal structure 2. Ability to describe the structures of simple close-packed inorganic compounds 3. Knowledge on photochemistry and kinetics of photochemical reaction 4. Skills in problem solving, critical thinking 5. Skills in analytical reasoning as applied to scientific problems
9.	18BCHC09	Practical-III Qualitative Inorganic Analysis	1. Skill in identifying inorganic elements by qualitative analysis 2. Experimental skills **3.** Record writing skills
10.	18BCHC10	Concise Inorganic Chemistry	1. Knowledge on chemistry and reactivity of main group elements 2. Understanding of trends and patterns in inorganic chemistry 3. Knowledge on Inter halogen compounds 4. Knowledge noble gases and silicones 5. Knowledge on non-aqueous solvents
11.	18BCHC11	Thermodynamics II and Dilute solutions	1. Analyze and evaluate various thermodynamic processes used for energy production - work and heat 2. Calculate and compare the efficiency of heat engine 3. Predict the change in ΔG change in temperature 4. Apply Le-Chatelier's principle for equilibrium process 5. Calculate molecular weight using boiling point elevation, lowering of vapor pressure and depression in freezing point
12.	18BCHC12	Practical-IV Qualitative Organic analysis	1. Qualitative identification of organic compounds 2. Preparing simple organic compounds 3. Carrying out chromatographic techniques - TLC and Paper chromatography
13.	18BCHI06	DSE IV - Computer Applications for Chemistry	1. Apply statistical methods to chemistry theories computationally 2. Comprehend the basic tools of computer science in relation with chemistry 3. Analyse plausible chemical reactions through computer models 4. Employ the knowledge from the computer to design

			lab experiments 5. Able to interpret the results of a calculation or simulation and evaluate whether the results accurately represent physical reality
14.	18BCHC13	Coordination Chemistry	1. Ability to apply theories of coordination chemistry to the structure of complexes 2. Ability to recognize the types of isomers in coordination compounds 3. Familiarity of applications of coordination compounds 4. Understanding the significance of transition elements
15.	18BCHC14	Selected topics in Organic Chemistry	1. Assess the mechanism of selected molecular rearrangements and their synthetic applications 2. Predict and analyze the conformations of acyclic compounds 3. Assign R/S , E/Z nomenclature to organic compounds 4. Nomenclature of different heterocyclic compounds
16.	18BCHC15	Chemical Kinetics and Phase Rule	1. Surface Chemistry and Catalysis 2. Phase diagram of simple eutectic system, two component systems 3. Theories of chemical kinetics and predict the rate of the reaction
17.	18BCHC16	Applied Chemistry - I	1. Thorough knowledge of oils, fats, soaps, waxes and analysis of oils and fats 2. Knowledge on soaps, detergents and shampoos 3. Knowledge on various types of corrosion and methods of corrosion control 4. Understanding of the chemistry of paints, varnishes, enamels and lacquers 5. Ability to understand small and large scale industrial chemical processes
18.	18BCHC17	Practical-V Quantitative Analysis II - Gravimetry	1. Describe the properties of precipitate and precipitating reagent. 2. Ascertain the principles of gravimetric analysis 3. Ability to select the proper precipitating reagents. 4. Infer the impact of stoichiometry in gravimetric analysis 5. Identify the proper procedural sequence about usage of chemicals
19.	18BCHC18	Environmental Chemistry (Self Study)	1. Apply eco friendly technology to reduce pollution 2. Get awareness about renewable and alternate sources of energy 3. Apply the principles of green chemistry in research and day today life
20.			1. Understanding of basic principles underlying electrochemical and electro-analytical techniques 2. Understanding of equations of electrochemistry and their applications to electro-analysis

21.	18BCHC22	Chemistry of Natural Products	1. Understand the synthesis and reactivity of fused, six-membered and smaller heterocyclic compounds. 2. Describe the chemistry of mono and disaccharides, polysaccharides 3. Elucidate the structure of selected terpenoids and alkaloids **4.** Recognize the various classes of natural products and their significance
22.	18BCHC23	Industrial Chemistry	1. Ability to apply chemical methods in solving industrial problems 2. Knowledge on water analysis and treatment 3. Understanding of the stages involved in manufacture of paper 4. Awareness on pollution and its control in Industry
23.	18BCHC24	Analytical Chemistry	1. Describe the different theoretical aspects of spectroscopic techniques 2. Describe and evaluate the application of NMR, Microwave, IR, UV-VIS and Raman Techniques 3. Analyse the experimental data and present it systematically 4. Identify and assess quantitatively using electro analytical, thermal techniques
24.	18BCHC25	Applied Chemistry - II	1. Thorough knowledge of chemical principles involved in polymer technology 2. Thorough understanding about classification of dyes and the dyeing methods 3. In depth knowledge on how drugs work and identify the types of interaction between drug functional groups and receptor sites 4. Comprehend the biochemical and physiological role of vitamins 5. Familiarization of different types of adhesives and alloys with their important applications
25.	18BCHC26	Practical-VI Physical Chemistry Experiments	1. Practical skill in carrying out experiments related to kinetics and ionic equilibria 2. Practical skill in carrying out experiments related to electrochemistry and Potentiometry 3. Practical skill in carrying out experiments related to adsorption 4. Hands on experience in the use of colorimeter, potentiometer and conductivity meter 5. Documentation skills
26.	18 BBCI01	DSE I Chemistry Theory for Biochemistry	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on chemical bonding and attractive forces, periodic properties and coordination compounds 3. Knowledge on functional groups in organic compounds and stereoisomerism 4. Fundamental knowledge of electro chemistry,

			surface chemistry and chemical kinetics 5. Appreciation of the significance of Chemistry in core field
27.	18 BBCI02	DSE I Chemistry Practical for Biochemistry	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
28.	18 BPHI03	DSE III Chemistry Theory for Physics	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on atomic structure, chemical bonding and attractive forces 3. Knowledge on organic compounds, periodic table and general characteristics of elements 4. Fundamental knowledge of electro chemistry and thermo chemistry 5. Appreciation of the significance of Chemistry in core field
29.	18 BPHI 04	DSE –III Chemistry Practical for Physics	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
30.	18 BBOI 07	DSE IV Chemistry Theory for Botany	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on chemical bonding and attractive forces and basic thermochemistry 3. Basic knowledge on carbohydrates, amino acids, proteins and enzymes 4. Familiarity in phytochemical analysis 5. Appreciation of the significance of Chemistry in core field
31.	18 BBOI 08	DSE IV Chemistry Practical for Botany	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
32.	18 BZOI01	DSE I Chemistry Theory for Zoology	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on chemical bonding and attractive forces 3. Basic knowledge on carbohydrates, amino acids, proteins and enzymes 4. Familiarity phytochemical analysis

			5. Appreciation of the significance of Chemistry in core field
33.	18 BZOI 02	DSE I Chemistry Practical for Zoology	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
34.	18BFNI 02	DSE II Chemistry Theory for Food Science and Nutrition	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on chemistry of carbon, electronic structure, periodic table 3. Basic knowledge on carbohydrates, amino acids, proteins and enzymes 4. Familiarity with instrumental analysis 5. Appreciation of the significance of Chemistry in core field
35.	18 BFNI03	DSE II Chemistry Practical for Food Science and Nutrition	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
36.	18 BFDI02	DSE II Chemistry Theory for Food Service Management and Dietetics	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Knowledge on chemistry of carbon, electronic structure, periodic table, body minerals 3. Basic knowledge on carbohydrates, amino acids, proteins and enzymes 4. Familiarity with instrumental analysis 5. Appreciation of the significance of Chemistry in core field
37.	18 BFDI03	DSE II Chemistry Practical for Food Service Management and Dietetics	1. Ability to adopt various laboratory safety measures and first aid techniques 2. Skills in systematic identification of organic compounds 3. Skills in carrying out volumetric titrations 4. Skills in estimation of salt solutions 5. Recording and documenting skills
38.	18 BTDI02	DSE I Chemistry Theory for Textiles and Clothing	1. Ability to adopt laboratory safety measures and first aid techniques 2. Knowledge on chemistry of carbon and chemical bonding 3. Knowledge on dyes and natural fibers 4. Familiarity with textile wet processing 5. Appreciation of the significance of Chemistry in core field
39.	18BTDI 03	DSE-I Chemistry	1. Ability to adopt laboratory safety measures and first

		Practical for Textiles and Clothing	aid techniques 2. Knowledge on chemistry of carbon and chemical bonding 3. Knowledge on dyes and natural fibers 4. Familiarity with textile wet processing 5. Appreciation of the significance of Chemistry in core field

M. Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MCHC01	Organic Chemistry I	1. Describe field effects, fullerenes and selected supramolecules 2. Assign R/S, E/Z nomenclature to suitable organic molecules 3. Assess the different methods of determination of reaction mechanism 4. Describe and formulate the mechanism of nucleophilic substitution reactions 5. Acquire knowledge of the concepts of organic reaction mechanisms to reaction of synthetic importance
2.	17MCHC02	Inorganic Chemistry I	1. Ability to elucidate crystal structures by applying basic crystallographic concepts 2. Understanding to predict the physical/electronic properties of compounds 3. Understanding of bonding and reactivity of coordination complexes 4. Understanding on reagents used in inorganic chemistry 5. Knowledge on applications of IR spectroscopy in the structural determination of metal carbonyls
3.	17MCHC03	Thermodynamics and Electrochemistry	1. Understanding of the concepts of thermodynamics and properties of real gases 2. Able to distinguish the various thermodynamical statistics and partition functions 3. Able to apply the concepts of non equilibrium thermodynamics to biological reactions 4. Ability to describe the electrochemical phenomena 5. Able to distinguish different fuel cells and to familiarise with corrosion protection methods
4.	17MCHC04	Qualitative analysis of binary mixture of organic compounds	1. Skill in carrying out crystallization and distillation 2. Practice in recording melting point and boiling point 3. Ability to identify organic compounds 4. Ability to devise synthetic procedures in derivatization of organic compounds 5. Record writing and documenting skills
5.	17MCHC05	Quantitative analysis	1. Ability to prepare organic compounds

		and organic preparations	2. Skills in estimation of organic compounds 3. Skills in extraction of selected natural products and analysis of oils 4. Knowhow of chromatographic techniques and 5. Record writing and documenting skills
6.	17MCHC06	Organic Chemistry II	1. Understanding of mechanisms of elimination reactions 2. Understanding of mechanisms of substitution reactions 3. Ability to apply the mechanistic concepts of reaction mechanism 4. Familiarization of methods of synthesis of heterocyclic compounds 5. Knowledge of reagents used for synthesis
7.	17MCHC07	Organic Chemistry III	1. Molecular orbital symmetry and thermal and photochemical reactions 2. Evaluate concerted reactions *via* FMO and PMO approach, electrocyclic reactions, cyclo additions and sigmatropic rearrangements 3. Photochemical reactions of alkenes, carbonyl and aromatic compounds 4. Identify the mechanism of various photochemical reactions 5. Ability to apply mechanistic concepts of learnt
8.	17MCHC08	Kinetics and Quantum Mechanics	1. Understanding of kinetics and mechanistic aspects of chemical reactions 2. Familiarity of the various adsorption isotherms 3. Ability to identify steps involved in studying a system quantum mechanically 4. Ability to generalize the HMO treatment of simple and conjugated π electron systems
9.	17MCHC09	Physical Chemistry Practical -I	1. Skills in carrying out experiments in Physical Chemistry 2. Understanding of kinetics of the reaction 3. Ability to determine solubility product 4. Understand two-component system and apply the concept to determination of eutectic composition 5. Record writing and documenting skills
10.	17MCHC10	Physical Chemistry Practical-II	1. Ability to prepare an inorganic complex 2. Formulate suitable methods for the preparation of desired inorganic complexes 3. Understanding the principles of EDTA titrations 4. Knowledge on buffer solutions 5. Develop practical skills in complexometric titrations
11.	17MCHC12	Spectroscopy - I	1. Knowledge on the principles and qualitative aspects of UV,NMR and ESR spectroscopy 2. Knowledge on the principles and applications of Xray and Neutron diffraction 3. Ability to interpret UV,NMR and ESR spectra4 4. Elucidate the structure of simple organic molecules

			from their spectral data 5. Predict crystal system based on x ray diffraction data
12.	17MCHC13	Spectroscopy- II	1. Knowledge on instrumental aspects of spectral techniques 2. Knowledge on the principles and qualitative aspects of IR, Raman and Mossbauer spectroscopy 3. Ability to Qualitatively analyze the spectral characteristics of organic compounds 4. Able to Elucidate the structure of simple organic molecules from their spectral data 5. Knowledge on identification of elements using flame emission and atomic absorption spectroscopy
13.	17MCHC14	Polymer chemistry	1. Knowledge on polymerization methods 2. Knowledge on Polymer processing methods 3. Knowledge on polymer blends, composites and nano composite **4.** Recognize natural and man-made polymers **5.** Appreciate the significance of commercial polymers
14.	17MCHC15	Research Methodology	1. Familiarization of various research concepts 2. Knowledge in formulating research designs 3. Ability to apply statistical analysis to research 4. Skills in the application of technology in research 5. Ability to write a good research report
15.	17MCHC16	Inorganic Chemistry Practical - I	1. Ability to identify elements in a given inorganic salt mixture by semi-micro inorganic qualitative methods 2. Ability to identify less common elements in a given inorganic salt mixture by semi-micro inorganic qualitative methods 3. Skills in estimation of metals by quantitative methods 4. Skills in estimation of alloys by quantitative methods 5. Record writing and documenting skills
16.	17MCHC17	Inorganic Chemistry Practical - II	1. Ability to prepare an inorganic complex 2. Formulate suitable methods for the preparation of desired inorganic complexes 3. Understanding the principles of EDTA titrations 4. Knowledge on buffer solutions 5. Develop practical skills in complexometric titrations
17.	17MCHC18	Environmental Chemistry(Self study course)	1. Knowledge on pollution and its mitigation/eradication 2. Able to educate the community on pollution and its mitigation 3. Knowledge on water quality standards 4. Adopt various methods for waste management 5. Ability to apply knowledge on environmental aspects
18.	17MCHC19	Phytochemical	1. Understanding on principles of medicinal chemistry

		Methods and Medicinal Chemistry	2. Familiarization of phytochemical techniques - extraction, separation and purification 3. Correlate drug action with structure 4. Identify mode of action of drugs based on structural features 5. Understanding of identification strategies of drugs/natural products
19.	17MCHC21	Inorganic Chemistry II	1. Ability to classify molecules into point groups 2. Apply the Knowledge of applications of group theory 3. Understanding of chemistry of cage, chain and cluster complexes 4. Familiarization of general characteristics of f-block elements and magnetic properties of their complexes 5. Knowledge on nuclear reactions and applications
20.	17MCHC22	Computers in Chemistry	1. Knowledge in C programming 2. Understanding of latest versions of Microsoft office 3. Ability to write C programmes for chemistry concepts 4. Ability to draw the molecular structure and view it in 3D form 5. Use computers in data acquisition and processing and use available software as a tool in data analysis
21.	17MCHC23	Chemistry of Biomolecules (Open book)	1. Knowledge of the chemistry of biomolecules 2. Appreciate the significance of biomolecules in daily life 3. Understanding of the metabolic pathways of formation of biomolecules
22.	17MCHM01	Green Aspects in Life	1. Awareness on Green Chemistry principles 2. Familiarization of Green Methods in daily life aspects 3. Acquaintance to Green methods of synthesis 4. Civic responsibility to create green and sustainable environment
23.	17MCHI01	Nanomaterials and Their Applications	1. Appreciate the state of art developments in nanotechnology 2. Identify common themes across nanotechnology 3. Predict major properties of metal nanoparticles and carbon clusters 4. Identify the various characterization methods for Nanoparticles
24.	19MCHP 01	Analytical and Phytochemical Techniques	1. Familiarization of phytochemical techniques - extraction, separation and purification 2. Training in sample handling and operation of SEM, XRD, Texture Analyzer, Plasma Chamber, Laser Profilometer and Nano Spraydrier 3. Ability to handle thermoanalytical and spectral techniques

M.Phil/PhD			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPCH 01/ 19 PHCH 01	Paper I Research Methodology	1. Knowledge on chromatographic techniques 2. Ability to analyze and interpret spectral and thermo analytical data **3.** Pursue research program and qualify as Chemist/Scientist in various industries and research institution
2.	19MPCH 02/ 19PHCH 02	Paper II– Advanced Paper in Chemistry	1. Correlate NMR parameters such as chemical shift, coupling constant and relaxation time with molecular structure 2. Identify unknown organic compounds with NMR, ESR, mass spectra and X-ray diffraction data. 3. Solve complex structures with the help of 2D spectra.
3.	19MHCH03A	Green Methods of Extraction And Nano chemistry	1. Appreciate the state of the art developments in the field of nanotechnology 2. Identify common themes across nanotechnology 3. Predict the major properties of nanoobjects such as nanotubes, quantum dots and nanoparticles. 4. Exemplify links between nanoscience and biological systems 5. Describes tools for properties of nanostructures 6. Understand the application of nanomaterials and implication on health and safety related to nanomaterials
4.	19MHCH03B	Electrochemical Energy Storage	1. Demonstrate the knowledge of principles of the electrochemical energy production and storage methods 2. Explain and compare the function of different batteries 3. Analyse the data obtained from various electrochemical techniques 4. Identify the environment effects of corrosion and explain the protection method
5.	19MHCH03C	Phytochemical Methods	1. Knowledge on phytochemical methods 2. Acquaintance of techniques involved in phytochemistry 3. Familiarity to spectral characterisation of natural products 4. Understand and Apprecaite the biosynthhesis of natural products
6.	19MHCH03D	Organometallic Chemistry	1. Understanding of the importance of bonding between ligands and metal atoms 2. Knowledge on the structure and formation of Organometallic Complexes 3. Ability to synthesize new Organometallic Complexes 4. Knowledge on metallocenes and its utilizations

7.	19PHCH03A	Corrosion Science	1. Describe the causes of various types of corrosion 2. Plan necessary laboratory tests, estimate the corrosion rate and take part in research programs to solve specific corrosion problems 3. Analyse the data obtained from various techniques 4. Identify the effects of corrosion and explain the protection method
8.	19PHCH03B	Organic Chemistry	1. Gain thorough knowledge in pericyclic and photochemical reactions and are able carry out these reactions. 2. Able to carry out stereo selective transformations in organic synthesis 3. Gain idea about the various types of heterocycles and their synthesis 4. Able to define green protocols in organic synthesis 5. Develop skill towards the planning and execution of multiple synthetic sequences
9.	19PHCH03C	Green Methods of Extraction and Nanochemistry	1. Appreciate the state of the art developments in the field of nanotechnology 2. Identify common themes across nanotechnology 3. Predict the major properties of nanoobjects such as nanotubes, quantum dots and nanoparticles. 4. Exemplify links between nanoscience and biological systems 5. Describes tools for properties of nanostructures 6. Understand the applications of nanomaterials and implications on health and safety related to nanomaterials.
10.	19PHCH03D	Advanced Materials Chemistry	1. Be able to comprehend about different synthesis methods and techniques for synthesis of modern materials. 2. Apply appropriate techniques for synthesis of novel materials for energy storage systems 3. Gain important information regarding characterisation of materials using variable techniques for surface, optical, thermal characterisation. 4. Relate computational methods of analysis to experimental techniques and design new techniques for synthesis of materials 5. Analyse and interpret corrosion of materials and explore new opportunities for corrosion protection
11.	19PHCH03E	Advanced Coordination Chemistry	1. Ability to understand the various theories of metal complexes. 2. Predict the structural and chemical properties of transition metal complexes. 3. Ability to qualitatively analyze the spectral characteristics of complexes. 4. Familiarization of various biomaterials and its properties.

Department of Computer Science

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BCSC01	Digital Computer Fundamentals	1. Acquire knowledge on the Binary logic, the use of number system and data representation. 2. Understanding Boolean algebra and its significance in digital computer operations. 3. Familiarity to design efficient combinational and sequential logic circuits. 4. Comprehend the various types of memory and their applications. 5. Master the basic hardware of a digital computer and its workings.
2.	18BCSC02	Data Structures and Algorithms	1. Analyzing the complexity of algorithms. 2. Applying linear and non- linear data structures to simple applications. 3. Application of appropriate sorting, searching and indexing techniques where required. 4. Ability to choose the appropriate file structures and access methods in real time applications. 5. Formulate new solutions for programming problems.
3.	18BCSC03	Programming in C	1. Obtain knowledge to Design an algorithm and draw flowcharts 2. Attain knowledge about the fundamentals of programming. 3. Trained skill to solve problems through programming environment for simple applications. 4. Understand the use of Arrays, functions, pointers, structures and unions. 5. Gain knowledge about the basics of file handling mechanism.
4.	18BCSC04	Computing Laboratory - I C	1. Design and develop programs that demonstrate effective use of C features. 2. Trace and execute the programs written in C language. 3. Develop programs using the basic elements like decision and control statements, Arrays and Strings. 4. Gain knowledge to know about the code reusability with the help of user defined functions and pointers. 5. Apply programming constructs to develop simple applications using files.
5.	18BCSI01	DSE – I Essential Mathematics for Computer Science	1. Work with Matrices and construct coefficient Matrix. 2. Formulate problems in sets and apply set operations. 3. Construct numerical solutions of nonlinear

			equations. 4. Formulate numerical interpolation and approximation of functions 5. Apply numerical integration using various rules.
6.	18BCSC05	Computer Architecture	1. Conscious of the representation of different data types and information handling in computers. 2. Responsive on various addressing modes and instruction formats 3. Realize the functional units of processor as Arithmetic and Logical operations and control functions. 4. Appreciate the insight of memory storage and operation details related to input/output. 5. Apprehend knowledge in storage and retrieval techniques of different high speed memories.
7.	18BCSC06	Internet and E-Commerce	1. Stay up to date with latest marketing trends. 2. Enable to send and receive the various types of online payments. 3. Enable efficient affiliate marketing. 4. Enable to use social media to promote business. 5. Enable customer retention.
8.	18BCSC07	Programming in C++	1. Apply object oriented principles for problem solving 2. Design programs with classes and objects 3. Adopt polymorphism mechanism 4. Attain reusability through Inheritance 5. Explore the ease of C++ Programming
9.	18BCSC08	Computing Laboratory - II C++	1. Develop application software 2. Achieve reusability through Inheritance 3. Utilize the salient features of C++ 4. Handle and manage files 5. Apply OOP concepts wherever applicable
10.	18BCSI02	DSE – II Programming Interactivity	1. Become familiar with the interactivity. 2. Understand the concepts of programming required for interactivity. 3. Master the basics of Arduino programming. 4. Able to understand how to sense environmental data. 5. Understand the concept of spatial and location based data manipulation
11.	18BCSC09	Operating Systems	1. Recall the concepts of file management. 2. Apply security aspects in appropriate situations. 3. Explore various other operating systems. 4. Apply knowledge gained through processor scheduling to other applications. 5. Analyze limitations of operating systems
12.	18BCSC10	Computer Networks	1. Discuss the basic rudiments of networking concepts. 2. Analyze in detail and understood the basic idea of different protocol.

			3. Analyze routing, packet switching and routing algorithms concepts. 4. Recognize the services of connectionless and connection oriented protocols. 5. Assess the internet domains and its services
13.	18BCSC11	Computer Graphics and Multimedia Systems	1. Identify the types of Graphics monitor, workstations, input devices and input techniques available to work with graphics. 2. Recognize the mathematical and heuristic algorithms behind the graphics object generation. 3. Familiarize the attributes of control the object shape and antializing techniques for the accurate display. 4. Comprehend the forms of 2D transformations, mapping process from word view to display and clipping process to select the visible portion, Construct the algorithms for 3D objects processing and familiarize 3D scene handling based on view plane direction. 5. Recall the multimedia technologies and components.
14.	18BCSC12	Programming in Java	1. Apply the salient features of Java programming. 2. Identify classes, objects, members of a class and relationship among them to solve a specific problem. 3. Develop client side programming using Applet and AWT 4. Implement packages to solve the complex problems and applying exceptional handling mechanisms. 5. Recall the principles and practice of object oriented concepts in the construction of robust, maintainable programs
15.	18BCSC13	Computing Laboratory - III Java	1. Develop Java applications using OOP concepts with appropriate program structure. 2. Demonstrate the concepts of polymorphism and inheritance. 3. Use and create packages and interfaces in a Java program. 4. Implement exception handling mechanisms during software development. 5. Design and develop an applet program
16.	18BCSC14	Computing Laboratory - IV Graphics and Multimedia	1. Construct basic shapes using algorithms. 2. Realize the concepts of Multimedia Systems and apply editing tools for images. 3. Design and implement an animation for various themes. 4. Create multimedia advertisement.

			5. Compose audio with effects
17.	18BCSI03	DSE – III Statistical Methods	1. Compare measures of Central Tendency and Dispersion for a given set of data and discuss the nature of the sample. 2. Interpret correlation between two sets of data. 3. Compute the regression equations. 4. Perform Time Series Analysis for a given data. 5. Apply Analysis of Variance techniques given any sample set of data.
18.	18BCSC15	Cyber Security	1. Identify various types of cyber-attacks, tools used for gathering information about target. 2. Assess different types of cyber criminals and the motives behind them. 3. Realize the exploitations and the malicious codes to be precautious. 4. Analyze the defense techniques suitable for the system. 5. Apply the techniques for securing the system
19.	18BCSC16	Microprocessors and Microcontrollers	1. Acquire knowledge on the Microprocessor basics and architecture. 2. Gain Assembly language programming skills. 3. Understanding the hardware components for interface and their functions. 4. Familiarity to relate Microcontroller parts and their operations. 5. Comprehend the features of latest Microprocessors.
20.	18 BCSC 17	Relational Database Management Systems	1. Become familiar with the database management systems. 2. Understand the functional dependencies and design of the relational database. 3. Master the basics of SQL and construct queries using SQL. 4. Design a relational database schema using SQL for a given problem-domain. 5. Understand the concept of concurrency control of database processing
21.	18BCSC18	Programming in Python	1. Apply decision and repetition structures in program design. 2. Develop functions to improve readability of programs 3. Design the programs with the use of Python lists and dictionaries 4. Adopt file and exception handling mechanisms 5. Ability to build python program to solve real world problems
22.	18BCSC19	Computing Laboratory - V Python	1. Develop Python programs with conditional statements 2. Apply functions and calling them 3. Adopt Python lists, tuples, dictionaries for representing compound data

			4. Analyze the mechanisms for handling files and exceptions 5. Utilize the salient features of python
23.	18BCSC20	Computing Laboratory - VI RDBMS	1. Identify Structure Query Language statements used in creation and manipulation of Database. 2. Develop and evaluate a real relational database application. 3. Create and maintain tables using PL/SQL. 4. Solve Query for a given relational database. 5. Learn the concept of generating suitable reports
24.	18BCSI04	DSE – IV Optimization Techniques	1. Formulate a real-world problem as a mathematical programming model with application software. 2. Solve the linear problems and analyze the simplex and dual simplex principles. 3. Apply optimality and allocation methods for resources 4. Demonstrate network scheduling concepts and apply critical path analysis and time estimates for real time project completion. 5. Apply sequencing algorithm for job scheduling
25.	18BCSC21	Fundamentals of Data Science	1. Students will be able to apply the basic Data Science knowledge on the day to day problems they encounter. 2. Students will realize that there are various phases that contribute to the completion of a Data Science Project and can select among the various modeling techniques. 3. Students will be able to apply Regression techniques for modeling a data science project. 4. Students will be able to apply the Clustering and Association rule mining for modeling a data science project. 5. Students can reproduce the knowledge gained and come out with a sample case study which they come across in their daily life and implement, document and present the same using the R Tool
26.	18BCSC22	Cloud Computing	1. Understand the cloud computing paradigm and its importance. 2. Analyze components of cloud computing and understand how business agility in an organization can be created. 3. Critique the consistency of services deployed from a cloud architecture. 4. Compare and contrast the economic benefits delivered by various cloud models based on application requirements, economic constraints and business requirements. 5. Explore some important cloud computing driven commercial systems.

27.	18BCSC23	Software Engineering	1. Acquire strong fundamental knowledge in software engineering. 2. Ability to apply software engineering principles, techniques, tools and practices. 3. Effectively demonstrate competence in communication, planning, analysis, design, construction, testing and deployment. 4. Adapt to new emerging technologies and methodologies. 5. Cope up with software quality standards.
28.	18BCSC24	Computing Laboratory - VII PHP and MySQL	1. Understand the general concepts of PHP scripting language for the development of Internet websites. 2. Use PHP logical and comparison operators, branching structures (if/switch), and loop structures (for, for each, do, do/while) 3. Build database using MySQL for the required applications. 4. Construct PHP program to connect and query database. 5. Understand, analyze and build web applications using PHP.
29.	18BCSC25	Computing Laboratory - VIII R Programming	1. Students can use the R tool for data analysis by writing simple programs using the data types and programming constructs available in it. 2. Students will be familiar with exporting and importing of files from and to R tool. 3. Students will understand the methods of obtaining visual interpretations of the data and thereby have a better understanding of the data before processing it further. 4. Students will be able to know how the statistical techniques can be effectively applied upon the given data and interpret the results. 5. Students will practice how to write user defined functions and applying the same on the data on hand.
30.	18BCSC26	Technical Communication (Self – study)	1. Improved grammatical structure and usage in communication. 2. Ability to choose between appropriate writing and communication styles. 3. Expertise in various reporting styles. 4. Effective presentation and writing skills. 5. Applying the learned skills in different areas of communication
31.	18BCSC28	Artificial Intelligence	1. Develop computer applications based on perception &Learning. 2. Simulate intelligence for reasoning and Learning. 3. In depth Understanding to tackle any AI problem.

			4. Representing knowledge appropriately 5. Distinguishing ambiguity in grammars
32.	18BCSC29	Introduction to IoT	1. Understand the basic ideas of IoT 2. Learn the functional design of the IoT based devices 3. Design and implement an IoT device for a given problem-domain 4. Understand the areas in which IoTs can be designed 5. Master the basics of IoT design methodologies
33.	18BCSC30	Client/Server Computing	1. Describe and synthesize the client server concepts and different types of servers. 2. Analyze the operating system services required for client/server architecture. 3. Master the concepts of SQL database server and Data Warehouse. 4. Familiarity with the concepts of transaction processing, functions of TP monitor and client/server interaction types. 5. Exposure to the concepts of distributed objects in client/server computing.
34.	18BCSC31	Computing Laboratory - IX Web Technologies	1. Knowledge on basic controls to develop web pages 2. Employing skills on session concepts in web page designing 3. Ability to select and apply appropriate validation controls in designing interactive web pages 4. Clarity in combining multiple rich text controls in web page design. 5. Apply ADO.Net concepts to connect to the backend database for processing
35.	18BCSC32	Computing Laboratory - X Android Programming	1. Prepare to use the development tools in the Android environment 2. Learn major components of Android API set to develop their own apps 3. Understand the Java programming language to build Android apps 4. Become familiar with new UI components 5. Prepare android apps for distribution on the Google Play Store
36.	18BCSV01	Desktop Publishing (Value Added Course)	1. Identify desktop publishing terminology and concepts. 2. Manipulate text and graphics to create a balanced and focused layout. 3. Create fliers, brochures, and multiple page documents. 4. Demonstrate presentations with multiple contents. 5. Apply text setting for the preparation of books.
37.	18BCSO01	Computer Fundamentals and Office Automation	1. Understand the preparation of letter documentation. 2. Enable to work with formula and graphs. 3. Creating the powerful power point presentation.

		Generic Elective (GE) Course	4. Understand the database concepts and create quires. 5. Enhance the knowledge about Internet.

BCA			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BCAC01	Digital Principles	1. Explore the basic components of a digital computer and their functions. 2. Acquire knowledge on simplifying digital circuits. 3. Apply Boolean algebra in gating network design. 4. Simplify and solve the logical expressions. 5. Design various counters.
2.	18BCAC02	Problem Solving using C	1. Understands programming methodologies by learning algorithm and flowcharts. 2. Obtain knowledge about the fundamentals of C programming. 3. Implement different Operations on arrays. 4. Understand use of functions, pointers, structures and unions. 5. Gain knowledge about the basics of file handling mechanism.
3.	18BCAC03	Computing Laboratory - I C	1. Construct programs that demonstrate effective use of C features. 2. Read, understand and trace the execution of programs written in C language. 3. Develop programs using the basic elements like decision and control statements, Arrays and Strings. 4. Understand about the code reusability with the help of user defined functions and pointers. 5. Apply programming constructs to develop simple applications.
4.	18BCAI01	DSE – I Essential Mathematics for Computer Science	1. Work with Matrices and construct coefficient Matrix. 2. Formulate problems in sets and apply set operations. 3. Construct numerical solutions of nonlinear equations. 4. Formulate numerical interpolation and approximation of functions 5. Apply numerical integration using various rules.
5.	18BCAC05	Data Structures and Algorithms	1. Analyzing the complexity of algorithms. 2. Applying linear and non- linear data structures to simple applications. 3. Application of appropriate sorting, searching and indexing techniques where required.

			4. Ability to choose the appropriate file structures and access methods in real time applications. 5. Formulate new solutions for programming problems.
6.	18 BCAC06	Object Oriented Programming with C++	1. Design programs with objects and classes. 2. Understand the significance of object oriented concepts for modular development. 3. Ability to develop applications using Object Oriented Programming Concepts. 4. Apply the concept of polymorphism and inheritance. 5. Develop the application software using object oriented programming with C++.
7.	18BCAC07	Computing Laboratory - III C++	1. Apply object-oriented programming features to program design and implementation. 2. Understand object-oriented concepts and how they are supported by C++. 3. Demonstrate the ability to analyze, use, and create functions, classes, to overload operators. 4. Developing applications in C++ using the understanding of Inheritance and polymorphism. 5. Develop solutions for a range of problems using Pointers and Exceptions
8.	18BCAC08	Computing Laboratory - IV Graphics and Multimedia	1. Employ multimedia tools. 2. Prepare images for print and web, create layouts for web pages, paper adverts, CD covers, posters, brochure package designing. 3. Compose audio on editing and mixing. 4. Demonstrate interactive slide shows, interactive graphic presentations. 5. Apply 2D animation
9.	18BCAC09	Computer Organization and Architecture	1. Acquire knowledge on representation of data and instructions. 2. Familiarity in micro operations and instruction classification. 3. Apprehend the functional units of Processor as Control, Bus and Data Flow. 4. Responsive on memory types, mapping and performance. 5. Clarity on Input – Output data transfer and different modes.
10.	18BCAC10	Relational Database Management Systems	1. Become familiar with the database management systems. 2. Understand the functional dependencies and design of the relational database. 3. Master the basics of SQL and construct queries using SQL. 4. Design a relational database schema using SQL for a

			given problem-domain. 5. Understand the concept of concurrency control of database processing.
11.	18BCAC11	Operating Systems	1. Recall the concepts of file management. 2. Apply security aspects in appropriate situations. 3. Explore various other operating systems. 4. Apply knowledge gained through processor scheduling to other applications. 5. Analyze limitations of operating systems.
12.	18BCAC12	Programming in Java	1. Understand the concepts of OOP, knows the basic Java language features, types, control structures and arrays. 2. Identify classes, objects, members of a class and relationship among them to solve a specific problem. 3. Learned the implementation of packages to solve the complex problems and applying exceptional handling mechanisms. 4. Learned the various methods in string and string buffer class. 5. Knows how to develop the client side programming using Applet and AWT.
13.	18BCAC13	Computing Laboratory - V Java	1. Develop Java applications using OOP concepts with appropriate program structure. 2. Demonstrate the concepts of polymorphism and inheritance. 3. Use and create packages and interfaces in a Java program. 4. Implement exception handling in Java. 5. To develop an applet program using AWT.
14.	18BCAC14	Computing Laboratory - VI RDBMS	1. Design and implement a database schema for a given problem-domain. 2. Implement a data base query language. 3. Create and maintain tables using PL/SQL. 4. Demonstrate exception handling mechanism 5. Apply row and column level triggers on tables.
15.	18BCAI03	DSE – III Statistical Methods	1. Compare measures of Central Tendency and Dispersion for a given set of data and discuss the nature of the sample. 2. Interpret correlation between two sets of data. 3. Compute the regression equations. 4. Perform Time Series Analysis for a given data. 5. Apply Analysis of Variance techniques given any sample set of data.
16.	18BCAC15	Computer Networks	1. Discuss the basic rudiments of networking concepts. 2. Analyze in detail and understood the basic idea of different protocol. 3. Analyze routing, packet switching and routing algorithms concepts.

			4. Recognize the services of connectionless and connection oriented protocols. 5. Assess the internet domains and its services.
17.	18BCAC16	E-Commerce	1. Recognizes the impact of Information and Communication Technologies, on the Internet in Business Operations. 2. Understanding Electronic Payment System and its environment. 3. Makeethical decisions related to e-commerce based on laws, privacy, and security. 4. Analyze the steps, tools, and security considerations needed to start selling online. 5. Acquire knowledge in identifying the main business and marketplace models for Electronic Communications and Trading.
18.	18BCAC17	Artificial Intelligence and Expert Systems	1. Examine various AI search algorithms. 2. Describe the fundamentals of knowledge representation. 3. Analyze search methods appropriate to AI problems. 4. Comprehend various forms of learning. 5. Exhibit working knowledge in PROLOG.
19.	18BCAC14	Computing Laboratory - VII Internet Programming	1. Ability to analyze and apply the role of HTML, CSS, XML, JavaScriptinweb based applications. 2. Knowledge on web page analysis and to identify its elements and attributes. 3. Apprehend web pages using HTML, JavaScript and Cascading Styles sheets. 4. Create XML documents and XML Schema. 5. Build and consume web services.
20.	18BCAC19	Computing Laboratory - VIII Python	1. Able to apply the principles python programming. 2. Write Python programs with control statements. 3. Implement methods and functions to improve readability of programs. 4. Demonstrate the use of Python lists and dictionaries. 5. Apply file and exception handling mechanism.
21.	18BCAI04	DSE – IV Optimization Techniques	1. Formulate a real-world problem as a mathematical programming model with application software. 2. Solve the linear problems and analyze the simplex and dual simplex principles. 3. Apply optimality and allocation methods for resources 4. Demonstrate network scheduling concepts and apply critical path analysis and time estimates for real time project completion. 5. Apply sequencing algorithm for job scheduling.
22.	18BCAC20	Software Engineering	1. Acquire strong fundamental knowledge in software engineering.

			2. Ability to apply software engineering principles, techniques, tools and practices. 3. Effectively demonstrate competence in communication, planning, analysis, design, construction, testing and deployment. 4. Adapt to new emerging technologies and methodologies. 5. Cope up with software quality standards.
23.	18BCAC21	Open Source Technologies	1. Apply the principles of Open source software. 2. Design real time applications using Open source. 3. Develop skill sets in Open source tools. 4. Able to apply the concepts of Open source in solving problems. 5. Ability to build and modify free and open source software packages.
24.	18BCAC22	Client/Server Computing	1. Describe and synthesize the client/server concepts and different types of servers. 2. Analyze the operating system services required for client/server architecture. 3. Master the concepts of SQL database server and Data warehouse. 4. Familiarity with the concepts of transaction processing, functions of TP monitor and client/server interaction types. 5. Exposure to the concepts of distributed objects in client/server computing.
25.	18BCAC23	Programming in .NET	1. Knowledge of major elements of the .NET framework. 2. Ability to analyze the basic structure of a VB.NET application. 3. Programming skills using VB on .NET. 4. Design and develop Web based applications on .NET. 5. Capable of integrating webpages using ADO.NET.
26.	18BCAC24	Computing Laboratory - IX .NET	1. Design/develop programs with GUI interfaces. 2. Code programs and develop interface using VB.NET. 3. Explore Visual studio framework to create windows and web based applications. 4. Apply ASP.NET controls in web applications. 5. Able to create database driven ASP.NET web applications.
27.	18BCAC25	Computing Laboratory - X PHP & MySQL	1. Understand the general concepts of PHP scripting language for the development of Internet websites. 2. Use PHP logical and comparison operators, branching structures (if/switch), and loop structures (for, for each, do, do/while) 3. Build database using MySQL for the required applications.

			4. Construct PHP program to connect and query database. 5. Understand, analyze and build web applications using PHP.
28.	18BCAC26	Quantitative Aptitude and Reasoning (Self-study)	1. Acquires Time Management for Competitive Examinations. 2. Makes Calculations successfully, Interprets Data, Communicate Results, Evaluates an issue and solve a problem in real- world context. 3. Develops Critical Thinking by analyzing complex issues using information from credible sources. 4. Procures the ability to read between the lines and understand various language structures. 5. Comprehends quick decision making.
29.	18BCAC28	IoT Design and Applications	1. Identify the components of IoT. 2. Comprehend the schemas for real time applications in IoT. 3. Analyze the building blocks of internet of things and characteristics. 4. Gain programming knowledge in Raspberry Pi with Python. 5. Understand different IoT based real time applications.
30.	18BCAC29	Data Analytics and Business Intelligence	1. Analyze and explore the applications of data analytics. 2. Apply statistical techniques for data analysis. 3. Discover interesting patterns using data mining techniques. 4. Acquire knowledge on Business Intelligence through Data Mining. 5. Recommend suitable business intelligence tool for industry related problems.
31.	18BCAC30	Cloud Architecture and Services	1. Acquire the knowledge on the basics of cloud computing. 2. Identify the architecture, infrastructure and delivery models of cloud computing. 3. Apply suitable virtualization concept for real-world problems. 4. Select the appropriate cloud player and its services for deploying a cloud environment. 5. Address the core issues of cloud computing such as security, privacy and interoperability.
32.	18BCAC31	Cyber Security	1. Identify various types of cyber-attacks, tools used for gathering information about target. 2. Assess different types of cyber criminals and the motives behind them. 3. Realize the exploitations and the malicious codes to be precautious. 4. Analyze the defense techniques suitable for the

			system. 5. Apply the techniques for securing the systems.
33.	18BCAC32	Computing Laboratory - XI Android Programming	1. Prepare to use the development tools in the Android environment. 2. Learn major components of Android API set to develop their own apps. 3. Understand the Java programming language to build Android apps. 4. Become familiar with new UI components. 5. Prepare android apps for distribution on the Google Play Store.

M.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MCSC01	Mathematical Foundations of Computer Science	1. Recall the concepts of matrices, set theories, relations, functions 2. Apply proving techniques of induction for statements 3. Be familiar with fundamental notions of probability, regression and analyze real world problems. 4. Model grammars and languages and able to devise languages accepted by finite state automata 5. Derive numerical methods for finding roots, integration, solution of linear and nonlinear equations
2.	17MCSC02	Principles of Compiler Design	1. Recall the concepts of matrices, set theories, relations, functions. 2. Apply proving techniques of induction for statements. 3. Be familiar with fundamental notions of probability, regression and analyze real world problems. 4. Model grammars and language and able to device languages accepted by finite state automata. 5. Derive numerical methods for finding roots, integration, solution cf linear and nonlinear equations.
3.	17MCSC03	Advanced Operating Systems	1. Describe and synthesize the various process management concepts including scheduling synchronization and deadlocks. 2. Master the concepts of memory management, including virtual memory. 3. Gain in-depth knowledge on processor management. 4. Conceptualize the concepts of Distributed Operating systems 5. Compare and contrast the different types of operating systems.
4.	17MCSC04	Data Communication and Networks	1. Gain the knowledge of building different types of networks.

			2. Identify and differentiate the functionalities of each layer in the protocol stack. 3. Choose the different standards of Ethernet and suggest one for the organization based on their applications. 4. Able to develop different routing protocols for the real world scenarics. 5. Enhance the ideas gained to higher order communication systems.
5.	17MCSC05	Advanced Data Structures and Analysis of Algorithms	1. Implement standard operations on various tree and graph data structures. 2. Apply the advanced data structures to real world problems. 3. Deploy sorting and search algorithms and analyze their computational complexities 4. Ability to understand NP completeness and identify different NP complete problems. 5. Usage of appropriate algorithm design techniques to solve real world problems.
6.	17MCSC06	Computing Lab I - Data Structures and Algorithms	1. To design and analyze the time and space efficiency of the data structure. 2. Design linear data structures stacks, queues and linked lists. 3. Propose non linear data structures trees and graphs, and implement their operations. 4. Identity the appropriate data structure for given problem. 5. Gain practical knowledge on the applications of data structures.
7.	17MCSC07	Data Mining and Warehousing	1. Apply the various steps of the KDD process and apply the relevant preprocessing techniques in large datasets 2. Delineate the processes involved in the construction of a data warehouse. 3. Apply data mining tools to demonstrate association, classification and clustering using different algorithms. 4. Differentiate and choose appropriate functionalities to solve specific needs. 5. Relate and apply the various DM functionalities to specific areas like financial data, biological data, WWW.
8.	17MCSC08	Software Project Management	1. Manage projects effectively 2. Evaluate software projects, develop and execute plans. 3. Carryout estimates and manage risks. 4. Monitor and control projects. 5. Manage people.
9.	17MCSC09	Cyber Security	1. Exhibit the knowledge in security principles, security architectures and components.

			2. Classify and assess different cyber-attacks and vulnerabilities. 3. Identify the different cyber crimes and frauds 4. Suggest necessary IT security controls, plans and procedures for an Organization. 5. Compare our cyber laws with International laws and able to practice ethics in cyber world,
10.	17MCSC10	Soft Computing	1. Knowledge of Neural Networks, Fuzzy logic and Genetic algorithm. 2. Application of Back Propagation Networks for real world problems. 3. Enable Fuzzy logic in industrial application. 4. Genetic Algorithm for optimization problems. 5. Use of appropriate Deep learning techniques.
11.	17MCSC11	Computing Lab II – RDBMS	1. Develop applications using PL/SQL. 2. Implement entity level and domain constraints. 3. Appropriate use of sub queries and joins. 4. Create objects. 5. Maintain database.
12.	17MCSC13	Embedded Systems	1. Learn fundamentals of analog and digital electronics. 2. Gain good knowledge on microcontrollers and implement in practical applications. 3. Understand the interface of microcontroller 4. Familiar on real time operating system. 5. Ability to design and conduct experiments as well as to organize, analyze and interpret data on multidisciplinary domains onto role of electronics and computer science.
13.	17MCSC14	Introduction to Data Science	1. An ability to use current techniques, skills, and tools necessary for computing. 2. Develop R codes for data science solutions 3. Explain how data is collected, managed and stored for data science. 4. Analyze the architectural elements of big data 5. Perform big data analytics using big data tools.
14.	17MCSC15	Mobile Communications	1. Identify and differentiate different wireless communication systems. 2. Predict the future of mobile communication technology. 3. Compare and analyze different satellite communications. 4. Acquire wireless protocol standards and special features. 5. Analyze the improvements suggested in wireless standards and architectures.
15.	17MCSC16	Digital Image Processing	1. Have a clear understanding of Digital Images. 2. Build knowledge about imageJ. 3. Learn to develop image processing application using ImageJ.

			4. Understands various processing involved in analyzing digital images. 5. Be able to write ImageJ programs for manipulating images.
16.	17MCSC17	Software Testing	1. Gain knowledge to test various processes and continuous quality improvement. 2. To handle types of errors and fault models. 3. To understand input space modeling using combinatorial design. 4. Students possess skill test to use various test tools to trace control flow,data flow and program mutations. 5. Students are trained to use software testing techniques in commercial environments.
17.	17MCSC18	Computing Lab III – R Programming (Open Book Test)	1. Construct and execute basic programs in R. 2. Import, review, manipulate and summarize data-sets. 3. Write functions and use R in an efficient way. 4. Use R for statistical calculations. 5. Able to graphically visualize data and results of statistical calculations.
18.	17MCSC19	Self-Study Course: Technical Communication	1. Effective presentation and writing skills. 2. Improve speaking skills. 3. Apply various style of technical communication. 4. Draft resume, letters and email with professionalism 5. Proficiency in preparing technical articles, review and research articles.
19.	17MCSI01	Inter Disciplinary CourseSocial Computing	1. Enable to represent, model, process and analyze social information. 2. Challenge problems in the various social media. 3. Enable to predict the market trends. 4. Use the Various Face Book Applications. 5. Be a part of effective LinkedIn groups.
20.	17MCSM01	Multi Disciplinary Course Cyber Security and Cyber Law	1. Exhibit the knowledge in security principles, security architectures and components. 2. Classify and assess different cyber attacks and vulnerabilities 3. Identify the different cyber crimes and frauds 4. Suggest necessary IT Security controls, plans and procedures for an Organization 5. Compare our cyber laws with International laws and able to practice ethics in cyber world.

MCA			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MCAC01	Mathematical Foundations of Computer Science	1. Recall the concepts of matrices, set theories, relations, functions 2. Apply proving techniques of induction for statements 3. Be familiar with fundamental notions of probability,

			regression and analyze real world problems. 4. Model grammars and languages and able to devise languages accepted by finite state automata 5. Derive numerical methods for finding roots, integration, solution of linear and nonlinear equations
2.	17MCAC02	Digital Computer Fundamentals	1. Gain knowledge on data representation and Binary codes used. 2. Ability to apply Boolean algebra in circuit design. 3. Acquaintance of knowledge to design combinational and sequential circuits. 4. Understanding the hardware used in computer arithmetic. 5. Familiarity in information storage and retrieval concepts.
3.	17MCAC03	Data and File Structures	1. Understand the behavior of basic data structures. 2. Summarize searching and sorting techniques 3. Describe stack , queue and linked list operation 4. Ability to have knowledge of tree and graphs concepts. 5. Apply indexing techniques on files and apply the hashing technique to resolve collision of records
4.	17MCAC04	Database Management Systems	1. Understand clearly about database management. 2. Build knowledge about relational data model. 3. Learn to normalize relational databases. 4. Understands different storages of data. 5. Be able to understand concurrent processing and recovery of databases.
5.	17MCAC05	Programming in C	1. Understand the fundamentals of C programming. 2. Choose the loops and decision making statements to solve the problem. 3. Implement different Operations on arrays. And functions to solve the given problem. 4. Understand pointers, structures and unions. 5. Implement file Operations in C programming for a given application.
6.	17MCAC06	Computing Lab I - C	1. Read, understand and trace the execution of programs written in C language. 2. Write a maintainable C program for a given solution 3. Analyze and construct effective algorithms 4. Construct programs that demonstrate effective use of c features 5. Build C program for simple applications of real life
7.	17MCAC07	Accounting and Managerial Decision	1. Knowledge on objectives of business and forms of business 2. Understanding the methods of book keeping and preparation of final accounts 3. Ability to analyze financial statements using relevant tools and techniques 4. Understanding the various elements of costs for the preparation of cost sheet

			5. Knowledge of budgeting and preparation of various budgets.
8.	17MCAC08	Computer System Architecture	1. Comprehend the representation of data and binary codes using Register Transfer Logic. 2. Acquaintance on different architectures of CPU as RISC/CISC. 3. Familiarity on Arithmetic of various number systems 4. Clear understanding of control design as Hardwired/micro programmed and I/O processor functionalities. 5. Responsive on recent updations in memory structure and multiprocessor systems.
9.	17MCAC09	Operating Systems	1. Understand the various process management concepts including scheduling, synchronization, deadlocks 2. Recall the concepts of storage management including virtual memory 3. Understand processor management and multiprocessor operating system organization concepts 4. Understand operating system security and protection mechanisms including threat monitoring, surveillance, auditing and access controls 5. Analyze the various types of operating systems including Unix, Windows
10.	17MCAC10	Programming in C++	1. Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects. 2. Understand dynamic memory management techniques using pointers, constructors, destructors, etc 3. Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. 4. Classify inheritance with the understanding of early and late binding. 5. Recall generic programming, templates, file handling
11.	17MCAC11	Computing Lab II – C++ and Data Structures	1. Demonstrate the basic concepts of object oriented programming 2. Develop C++ programs for simple applications. 3. Describe the efficiency of algorithms with respect to the choice of data structure 4. Identify the problem given and design the algorithm using various algorithm design techniques. 5. Gain practical knowledge on the applications of data structure.
12.	17MCAC13	Data Communication	1. Gain the knowledge of building different types of networks.

		and Networks	2. Identify and differentiate the functionalities of each layer in the protocol stack. 3. Choose the different standards of Ethernet and suggest one for the organization based on their applications. 4. Suggest the appropriate routing protocols for different applications. 5. Appreciate and Identify the future Communication Technologies
13.	17MCAC14	Software Engineering	1. Get an insight into the processes of software development 2. Able to understand the problem domain for developing SRS and various models of software engineering 3. Able to Model software projects into high level design using DFD, UML diagram 4. Able to measure the product and process performance using various metrics 5. Able to Evaluate the system with various testing techniques and strategies
14.	17MCAC15	Resource Management Techniques	1. Understand the concepts of Linear Programming 2. Formulate real life problems into Linear Programming Models 3. Apply allocation and optimization techniques for scarce resources problems 4. Analyze the scheduling concepts and apply critical path analysis for real life timely project scheduling and completion 5. Apply the sequencing methods of processing and model a dynamic queuing system
15.	17MCAC16	Data Mining and Warehousing	1. Apply the various steps of the KDD process and apply the relevant preprocessing techniques in large datasets. 2. Delineate the processes involved in the construction of a data warehouse 3. Apply data mining tools to demonstrate association, classification and clustering using different algorithms 4. Make use of appropriate business intelligence tools and provide solutions. 5. Relate and apply the various DM functionalities to specific areas like financial data, biological data, WWW.
16.	17MCAC17	Artificial Intelligence	1. Have a clear understanding of Artificial intelligence. 2. Build knowledge about Expert systems. 3. Learn various algorithms used for artificial intelligence. 4. Understands basic machine learning concepts. 5. Understands the basics of knowledge representations.

17.	17MCAC18	Computing Lab III – Java	1. Create java programs that solve simple business problems. 2. Validate user inputs. 3. Basics of java programming multi-threaded programs and exception handling 4. Skills to apply OOP in java programming in problem solving 5. Use of GUI components (Console and GUI based)
18.	17MCAC19	Self-Study Course: Technical Communication	1. Effective presentation and writing skills 2. Improve speaking skills 3. Apply various style of technical communication 4. Draft resume, letters and email with professionalism 5. Proficiency in preparing technical articles, review and research articles
19.	17MCAC21	Soft Computing	1. Knowledge of Neural Networks, Fuzzy logic and Genetic algorithm. 2. Application of Back Propagation Networks for real world problems. 3. Enable Fuzzy logic in Industrial application. 4. Genetic Algorithms for optimization problems 5. Use of appropriate Deep learning techniques
20.	17MCAC22	Cyber Security	1. Exhibit the knowledge in security principles, security architectures and components. 2. Classify and assess different cyber attacks and vulnerabilities 3. Identify the different cyber crimes and frauds 4. Apply necessary IT Security controls, plans and procedures to ensure Organization's security 5. Distinguish our cyber laws with International laws and able to practice ethics in cyber world.
21.	17MCAC23	Digital Image Processing	1. Have a clear understanding of Digital Images. 2. Build knowledge about ImageJ. 3. Learn to develop image processing application using ImageJ. 4. Understands various processing involved in analyzing digital images. 5. Be able to write ImageJ programs for manipulating images.
22.	17MCAC24	Software Testing	1. Gain knowledge to test various processes and continuous quality improvement 2. To handle types of errors and fault models 3. To understand input space modeling using combinatorial design 4. Students possess skill test to use various test tools to trace control flow, data flow and program mutations. 5. Students are trained to use software testing techniques in commercial environments.
23.	17MCAC25	Computing Lab IV – RDBMS	1. Develop applications using PL/SQL. 2. Implement entity level and domain constraints. 3. Appropriate use of sub queries and exception

			handling. 4. Create objects. 5. Maintain tables and database.
24.	17MCAC26	Computing Lab V – Python Programming	1. Understanding of scripting and the contributions of scripting languages. 2. Understanding of Python especially the object-oriented concepts 3. Understanding of the built - in objects of Python 4. Understanding of different types of plots and database concept 5. Be exposed to advanced applications such as TCP/IP network programming, multithreaded programming, Web applications, discrete - event simulations, etc.
25.	17MCAC28	Software Project Management	1. Manage projects effectively. 2. Evaluate software projects strategically and technically. 3. Carryout estimates, manage risks, develop and execute plans. 4. Monitor cost and projects. 5. Manage people and emphasize quality standards.
26.	17MCAC29	Embedded Systems	1. Learn fundamentals of analog and digital electronics. 2. Gain good knowledge on microcontrollers and implement in practical applications 3. Understand the interface of microcontroller 4. Familiar on real time operating systems 5. Ability to design and conduct experiments as well as to organize, analyze and interpret data on multidisciplinary domains onto role of electronics, computer science,
27.	17MCAC30	Introduction to Data Science	1. Comprehend major practice areas in data science 2. Deploying the Data Analytics Lifecycle to address big data analytics 3. Identify patterns in data using visualization 4. Utilize R tool, MapReduce/Hadoop, in database analytics. 5. Develop actionable insight based on data
28.	17MCAC31	Mobile Communications	1. Identify and differentiate different wireless communication systems. 2. Predict the future of mobile communication technology. 3. Comprehend the different technologies behind the generations of wireless networks. 4. Acquire wireless Protocol standards and special features. 5. Apply and Suggest suitable wireless communication systems standards required for an organization.
29.	17MCAC32	Computing Lab VI – R Programming	1. Construct and execute basic programs in R 2. Import, review, manipulate and summarize data-sets 3. Write functions and use R in an efficient way.

		(Open Book Test)	4. Use R for statistical calculations 5. Able to graphically visualize data and results of statistical calculations
30.	17MCAC33	Computing Lab VII – Web Technologies	1. Select and apply markup languages for processing, identifying, and presenting of information in web pages. 2. Use scripting languages and web services to transfer data and add interactive components to web pages. 3. Create and manipulate web media objects using editing software. 4. Incorporate aesthetics and formal concepts of layout and organization to design websites that effectively communicate using visual elements. 5. Conceptualize and plan an internet-based business that applies appropriate business models and web technologies.

PG Diploma in Artificial Intelligence			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	20PDAI01	Effective Communication and Technical Writing	1. Understands how to communicate effectively 2. Able to write Technical documents 3. Differentiate between the technicalities of presenting their data in the form of a thesis 4. Learn to write journal articles 5. Construct model articles and case studies
2.	20PDAI02	Fundamentals of Artificial Intelligence and Expert Systems	1. Gets in-depth knowledge Artificial Intelligence 2. Learns fundamentals of Machine Learning Technology 3. Understands the concepts of Expert systems 4. Learns PROLOG, a language for Expert systems 5. Familiarizes various real world applications using Artificial Intelligence
3.	20PDAI03	Machine Learning	1. Explain the concept of Machine learning 2. Build Machine Learning algorithms 3. Understand Neural Networks and Deep Learning 4. Classify different Learning methods 5. Solve Classification and Clustering problems.
4.	20PDAI04	Predictive Data Analytics	1. Explain the concept of Predictive analysis 2. Perform Data cleansing and visualization 3. Develop predictive models 4. Cluster by using different methods 5. . Solve Classification problems.
5.	20PDAI05	Programming using R	1. Understands the basic concepts of R programming 2. Become aware of the descriptive statistics using R 3. Learns to use practical Machine Learning techniques 4. Learns to apply Support Vector Machine and Decision Trees

			5. Plans and develop Machine Learning applications using R
6.	20PDAI06	Artificial Intelligence Lab – I, Problem Solving	1. Understand the basic concepts of PROLOG Programming 2. Capable of AI and ML programming concepts 3. Able to program various predictions and analysis. 4. Becomes familiar with programming of AI concepts 5. Gains knowledge about programming for AI and ML problems.
7.	20PDAI07	Introduction to Digital Intelligence	1. Understands the basic concepts of Digital Intelligence 2. Become aware of the current Digital Transformations 3. Plans and develop Digital marketing 4. Learns to do Search Engine Optimization 5. Learns to use social media for Marketing
8.	20PDAI08	Computer Vision using MATLAB	1. Understand the role of image processing and its digital formation 2. Build the knowledge about spatial transformation using MATLAB 3. Understands various processing involved in image analyzing 4. Learn to implement various feature extraction techniques 5. Gain knowledge about various applications of image processing
9.	20PDAI09	Artificial Intelligence with IoT	1. Gets in-depth knowledge Artificial Intelligence with IoT 2. Learns fundamentals of Deep Learning Technology 3. Understands the concepts of Genetic Algorithm 4. Learns the concept of Reinforcement Learning 5. Familiarizes various real world applications using Artificial Intelligence with IoT
10.	20PDAI10	Programming using Python	1. Explain the concept of Python programming 2. Develops Python programmes. 3. Perform Clustering and Classification using Python 4. Develop Supervised Learning methods using Python 5. Know to perform unsupervised learning methods using Python.
11.	20PGDAI11	Artificial Intelligence Lab – II, Model Development	1. Understand the concepts of Image processing for AI based models 2. Capable of AI and ML programming concepts 3. Becomes familiar with designing of AI models 4. Gains knowledge about programming for smart systems.

M. Phil			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPCS03A	Cyber Security and Cloud Computing	1. Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication. 2. Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP. 3. Able to define Cloud Computing and memorize the different Cloud service and deployment models. 4. Design & develop backup strategies for cloud data based on features. 5. Analyze the different cyber security breaches and targeted attacks.
2.	19MPCS03B	Data Warehousing and Mining	1. Acquired knowledge on the data mining steps and Big data Analytics. 2. Understanding on various Data warehouse schemas and Big Data platforms. 3. Comprehend association rule mining on different data formats. 4. Gain Knowledge on various classification, prediction and classifying techniques. 5. Apply mining methods on different complex data types.
3.	19MPCS03C	Machine Learning and Data Mining	1. Becomes familiar with Machine Learning concepts and techniques. 2. Know how to make use of algorithms related to Data mining, Statistical Learning. 3. Explore and experiment computational learning approaches. 4. Learns to compare and analyze the performance of the computational models. 5. Learns Artificial Neural Networks with respect to real world problems.

Ph. D			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19PHCS03B	Big Data Analytics and Machine Learning	1. Understand and demonstrate the role of statistics in the analysis of dataset 2. Know standard methods of data analysis and information retrieval 3. Describe the concepts and models of machine learning and able to translate a real-world problem into

			mathematical terms 4. Design and implement algorithms for supervised and unsupervised learning 5. To Design and develop the product related to IoT
2.	19PHCS03C	Data Warehousing and Mining	1. Acquired knowledge on the data mining steps and Big data Analytics. 2. Understanding on various Data warehouse schemas and Big Data platforms. 3. Comprehend association rule mining on different data formats. 4. Gain Knowledge on various classification, prediction and classifying techniques. 5. Apply mining methods on different complex data types.
3.	19PHCS03D	Digital Image Processing	1. Understand the fundamental concepts of Digital Image Processing and basic relations among pixels. 2. Differentiate Spatial and Frequency domain concepts for image enhancement. 3. Understand and apply Image segmentation, restoration techniques. 4. Understand the need for image compression and to l earn the various techniques of image compression 5. Recognize the morphological operations on image.
4.	19PHCS03E	Machine Learning and Data Mining	1. Becomes familiar with Machine Learning concepts and techniques. 2. Know how to make use of algorithms related to Data mining, Statistical Learning. 3. Explore and experiment computational learning approaches. 4. Learns to compare and analyze the performance of the computational models. 5. Learns Artificial Neural Networks with respect to real world problems.
5.	19PHCS03F	Data Warehousing and Data Mining	1. Recognize Data Warehouse fundamentals, Data Mining Principles 2. Design data warehouse with dimensional modelling and apply OLAP operations. 3. Classify appropriate data mining algorithms to solve real world problems. 4. Compare and evaluate different data mining techniques like classification, prediction, and clustering. 5. Illustrate complex data types with respect to spatial and web mining. 6. Promote the user experiences towards research and innovation.
6.	19PHCS03G	Data Analytics and Machine Learning	1. Understand and demonstrate the role of statistics in the analysis of dataset 2. Know standard methods of data analysis and information retrieval

			3. Describe the concepts and models of machine learning 4. Design and implement algorithms for supervised and unsupervised learning 5. Be able to translate a real-world problem into mathematical terms
7.	19PHCS03H	Machine and Deep Learning Methods for Cyber Security	1. Understand and demonstrate the role of statistics in the analysis of dataset 2. Know standard methods of data analysis and information retrieval 3. Describe the concepts and models of machine learning 4. Design and implement algorithms for supervised and unsupervised learning 5. Be able to translate a real-world problem into mathematical terms
8.	19PHCS03I	Data and web Mining	1. Understands the theoretical concepts of Data mining. 2. Become familiar with practical aspects of information and web data mining. 3. Understands the quantitative evaluation methods of data and web usage mining.
9.	19PHCS03J	Data Mining and warehousing	1. Acquired knowledge on the data mining steps and Big data Analytics. 2. Understanding on various Data warehouse schemas and Big Data platforms. 3. Comprehend association rule mining on different data formats. 4. Gain Knowledge on various classification, prediction and classifying techniques. 5. Apply mining methods on different complex data types.
10.	19PHCS03K	Learning Analytics and Machine Learning	1. Understand and demonstrate the role of statistics in the analysis of dataset 2. Be able to understand the basics of learning analytics 3. Know standard methods of data analysis and information retrieval 4. Describe the concepts and models of machine learning 5. Design and implement algorithms for supervised and unsupervised learning
11.	19PHCS03L	Soft Computing	1. Acquire basic knowledge in AI and Neural Networks. 2. Appreciate the types of Back Propagation networks. 3. Implement Fuzzy Logic using MATLAB toolbox. 4. Apply Genetic Algorithm in various real world applications.
12.	19PHCS03M	Software Engineering	1. Apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment. 2. Work in one or more significant application domains. 3. Work as an individual and as part of a multidisciplinary team to develop and deliver quality

			software . 4. Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle. 5. Demonstrate an ability to use the techniques and tools necessary for engineering practice.

Department of Information Technology

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BITC01	Introduction to Information Technology	1. Accomplish basic computer concepts knowledge. 2. Realize knowledge of IPR, Communication Process and Communication Media. 3. Analyze the importance of networks and its types includes network protocols, architecture and network standardization. 4. Gain knowledge about Virtual Reality(VR), its history, uses and its future. 5. Understand the technique behind OLTP and OLAP.
2.	18BITC02	C Programming	1. Read, understand and trace the C program execution. 2. Implement programs using control structures, pointers and arrays. 3. Relate and apply arrays and strings into programs. 4. Extend the C programming through functions and arguments. 5. Demonstrate using pointers and memory management in C.
3.	18BITC03	C programming–Practical I	1. Read, understand and trace the C program execution. 2. Implement programs using control structures, pointers and arrays. 3. Relate and apply arrays and strings into programs. 4. Extend the C programming through functions and arguments. 5. Demonstrate using pointers and memory management in C.
4.	18BITC04	Fundamentals of Internet and Office Automation - Practical II	1. Use Office applications to accomplish office work with professional excellence 2. Complete basic operations necessary to use Internet and email independently 3. Use common internet applications efficiently to meet the professional requirements 4. Prepare a well-constructed presentation by using various components such as Spreadsheet and PowerPoint. 5. Design desktop databases using MS-Access to run necessary various business applications
5.	18BITC05	Digital Fundamentals and Architecture	1. Know the fundamental digital principles and architecture. 2. Identify and design basic circuits. 3. Relate CPU, organization with different addressing modes and instruction formats. 4. Extend knowledge on I/O organization, Interrupt and I/O processor.

			5. Structure different memory organization based on request
6.	18BITC06	Object Oriented Programming with C++	1. Describe and usage of basic programming eleme functions and file handling in C++ 2. Articulate the Object oriented programming concepts and apply it in C++ programming language. 3. Collaborate the characteristics of an object-oriented programming language: data abstraction, information hiding, inheritance, and dynamic binding of the messages to the methods in C++ programs. 4. Demonstrate using pointers and memory management in C++. 5. Infer the File Management in C++.
7.	18BITC07	Object Oriented Programming with C++ - Practical III	1. Breakdown simple programming goals into object-oriented components, propose and evaluate different designs for solving problems 2. Gain knowledge and usage of basic programming elements, functions and file handling in C++ 3. Demonstrate the Object oriented programming concepts and apply it in C++ programming language for reusability and interoperability. 4. Correlate object oriented programming and procedure oriented programming 5. Develop programs for file and template related concepts
8.	18BITC08	Software Engineering	1. Get insight of software development process model 2. Gain knowledge on software requirement specification and Scenario based modeling 3. Design the software and gain different architecture 4. Gain Knowledge on software quality metrics and testing strategies 5. Get idea on Software configuration management and software Maintenance after software development
9.	18BITC09	Operating Systems	1. Know the fundamentals of Operating Systems. 2. Identify and design parallel processing and concurrent programming. 3. Recover problems in deadlocks and Multiprogramming 4. Extend knowledge on Virtual Storage and Processor Scheduling. 5. Structure different file systems and Linux Programs.
10.	18BITC10	Relational Database Management System	1. Understand the basic concepts of the database management system. 2. Acquire the knowledge to design a database using ER diagrams 3. Acquire the knowledge on integrity constraints, views and calculation over relation using algebra

			and calculus. 4. Able to develop relational DBMS using SQL commands 5. Able to Develop a simple database using normalization schema refinement in database
11.	18BITC11	Data Structures and Algorithms	1. Write and analyze efficient algorithm for a given problem and to analyze its time complexity 2. Apply the suitable data structure to a given problem. 3. Utilize data structure techniques in problem solving. 4. Gain Knowledge on Memory management , Tree and its implementation 5. Apply data structures and algorithms for different type of searching and sorting
12.	18BITC12	Database Management System using SQL-Practical IV	1. Identify Structure Query Language statements used in creation and manipulation of Database 2. Write queries using various DML commands. 3. Construct complex queries using joins and group by and test. 4. Experiment PL/SQL cursors, functions, triggers, procedures and Exception handling. 5. Analyze and design a database application
13.	18BITC13	Data Structures – Practical V	1. Design and implement various application using arrays 2. Apply stack concept providing solution to evaluate expression and convert infix to postfix expression. 3. Implement various types of queues . 4. Design and develop linked list like singly ,doubly linked list and circular linked list. 5. Implement a non linear data structure like a Binary tree Search and Sorting
14.	18BITC14	Client/Server Computing	1. Get Knowledge on client and server 2. Interpret client and server operating system 3. Gain knowledge on RPC, MOM, SQL database server 4. Acquire knowledge on properties ,models and standards on transaction 5. Relate knowledge about groupware, distributed object and web client/server components
15.	18BITC15	Data Communications and Networks	1. Understand the basic concepts of data communications and Networking 2. Compare different switching techniques and Transmission media 3. Classify different types of networks and Recognize the different internetworking devices and their functions 4. Describe how TCP and UDP function and Explain the role of protocols in networking 5. List the functions performed by layers in the OSI

			model
16.	18BITC16	Software Testing	1. Understand the basic concepts of testing and context of testing. 2. Analyze about black box testing, its challenges and Integration testing. 3. Provide opportunity to explore about functional and non-functional testing. 4. Formulate various tools, types of performance and regression testing. 5. Gain expertise in managing the test, test process, reporting and metrics of testing.
17.	18BITC17	Java Programming	1. Use the JVM and basic Java programming elements. 2. Know the Class-Object paradigm and make use of strings, arrays and functions in programming. 3. Create and use the Interfaces, packages and threaded programming. 4. Demonstrate the Applet programming and handling exceptions. 5. Construct AWT components and two tier programming using JDBC
18.	18BITC18	Java Programming – Practical VI	1. Identify classes, objects, members of a class and the relationships among them for a specific problem 2. Know about new ideas and advances, techniques, and tools and to use them effectively. 3. Develop programs using appropriate packages for Inter –thread Communication and Synchronization 4. Construct GUI applications to handle events. 5. Design, develop, test and debug Java programs using object – oriented principles in conjunction with development tools including integrated development environments
19.	18BITC19	.Net Programming- Practical VII	1. Demonstrate VB.Net integrated development environment. 2. Design and create.Net applications using forms and controls. 3. Construct programs and develop interface using .Net. 4. Perform tests, resolve defects and revise existing code. 5. Develop database connected applications with ADO.NET and generate reports based on the applications.
20.	18BITC20	E-Commerce	1. Explain the components and roles of the Electronic Commerce environment. 2. Analyze the impact of E-commerce business models and internet technologies. 3. Illustrate the current challenges and security issues in e-commerce. 4. Understand Web marketing approaches and elements of branding.

			5. Enumerate the major types of social networks, auctions and portals
21.	18BITC21	Python Programming	**1.** Demonstrate the working environment of python. 2. Develop programs using conditional statements, looping constructs and functions. 3. Devise lists, tuples, dictionaries and files in python. 4. Identify and debug errors in the program. 5. Make use of python modules for reusability.
22.	18BITC22	Web Technologies	1. Know the recent web technologies and able to opt the appropriate technology to develop web applications based on the given requirements. 2. Design web applications with aesthetics perception in designing and incorporating interactive visual elements. 3. Design and implement static web pages and dynamic web applications with the available technologies 4. Combine and make use of multiple technologies to implement web applications incorporated with dynamic effects using JavaScript 5. Build efficient data-driven web based applications using PHP and MySQL
23.	18BITC23	Computer Graphics	1. Define about computer graphics and devices used for graphic implementation. 2. Implement lines, circle and ellipse generating algorithms. 3. Capable to ascertain graphic system attributes. 4. Know how to determine 2D transformations and various clipping operations. 5. Develop underlying ideas about 3D graphic methods, packages and transformations
24.	18BITC24	Multimedia Applications – Practical VIII	1. Can design Web pages, Animated banner, Broucher for Conferences, Cards for any events. 2. Gains knowledge of filtering techniques using transformations. 3. Design wallpaper using color balancing, watermarking and blending modes. 4. Able to create cartoon movies with voice buttons. 5. Can create Stickman and photo gallery slideshow
25.	18BITC25	Object Oriented Analysis and Design (Self study)	1. Examine software application specifications based on the logical components of the system 2. Analyze and model the functional requirements of the application 3. Have familiarization with the application of UML in analyzing and designing the system 4. Design an application using a variety of Software Development Methodologies and able to develop robust software components 5. Perform testing to evaluate the correctness and quality of the Software

26.	18BITC27	Mobile Communication	1. Understand the basic concepts and list the applications of mobile communications 2. Describe the features and functions of multiplexing and modulation 3. Compare different Multiple Access Techniques 4. List the applications of satellite systems and describe the routing techniques of satellite transmission. 5. Differentiate various wireless LAN Technologies.
27.	18BITC28	Cryptography and Network Security	1. Identify various security attacks and hence able to deal with them using various handling mechanisms 2. Explore the vulnerabilities in computing systems and so able to discover an effective security solution. 3. Protect Systems and Network against various network threats 4. Design a security application which provides C-I-A of data 5. Defend the systems from Viruses and Intruders.
28.	18BITC29	Compiler Design	1. Demonstrate knowledge in basic concepts of compiler designing techniques. 2. Understand and build rules and grammars using the concepts of lexical analysis 3. Facilitate to comprehend syntax analysis concepts. 4. Accomplish and devise experiments for code and Intermediate code generation. 5. Familiar with code optimization techniques to enhance the performance of a program
29.	18BITC30	Fundamentals of Cyber Security	**1.** Evaluate the needs of the information security of data **2.** Analyze various security threats and attacks 3. Assess security system policies so as to effectively protect the critical data of an organization 4. Frame and update cyber security tactics and policies to enhance the information security 5. Administer various activities related to Security Standards
30.	18BITC31	Android Programming–Practical IX	1. Distinguish between Android and other mobile development environments. 2. Simulate basic Android controls 3. Construct small Android applications 4. Create user interfaces for mobile applications 5. Android's communication API

M.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MITC01	Mathematical Foundation for	1. Illustrate simple set relationships in probability, statistics and computer science.

		Information Technology	2. List out the operations on formal languages. 3. Understand the algorithm used to turn an NFA in to an equivalent DFA. 4. Apply PERT and CPM in project scheduling problems. 5. Identify the impact of varied factors on business sales and profits using regression analysis
2.	17MITC02	Advanced Java Programming	1. Gain knowledge and usage of basic programming elements, functions and file handling in Java. 2. Demonstrate the client/server application through java networking. 3. Use the event handling and able to adapt applet programming strategy. 4. Acquire Knowledge about the ODBC-JDBC connectivity, servlets, cookies and sessions. 5. Use the JSP and Java Beans Technology for efficient programming.
3.	17MITC03	Design And Analysis of Algorithms	1. Understand the basictechniques for designing algorithms. 2. Evaluate and estimate the performance of the algorithms. 3. Select the appropriate algorithm to solve a problem by considering the problem characteristics. 4. Construct efficient algorithms for simple computational tasks. 5. Compare parallel algorithms with respect to time and space complexity
4.	17MITC04	Cloud Computing	1. Assess various cloud models and services. 2. Describe Virtualization and classify its types. 3. Identify the infrastructure of cloud computing 4. Demonstrate the use of Map-Reduce. 5. Analyse the Risks and challenges in Cloud environment.
5.	17MITC05	Social Network Mining	1. Summarize the essential components and functionalities of Social Networks. 2. Evaluate the strength and limitations of Social Networks. 3. Detect, discriminate and evaluate various social communities to mine the data. 4. Understand how to predict user behaviour and to construct user model based on their preferences. 5. Administer various mining techniques to extract data.
6.	17MITC06	Advanced Java Programming – Practical I	1. Use an IDE like Eclipse or Netbeans for quicker coding/debugging 2. Develop Client/server programming using different networking concepts 3. Demonstrate GUI applications to handle events with JDBC connectivity 4. Apply advanced Java features such as RMI,

			Servlets, JSP and JavaBeans in programming. 5. Produce reusable and extensible design to minimize rework
7.	17MITC07	Internet of Things	1. Interpret the fundamental functionalities of IoT and its architectural view. 2. Integrate real world day-to-day applications with IoT systems. 3. Construct IoT design methodology and explore IoT systems and servers. 4. Integrate physical, embedded devices and online components. 5. Organize IoT tools, IoT and Cloud, IoT and Data Analytics to enhance the performance
8.	17MITC08	Soft Computing	1. Gain Knowledge about various machine learning andsoft computing concepts, techniques like genetic algorithm, neural networks, fuzzy logic and neurofuzzy. 2. Examine Genetic algorithms and Machine learning based on Genetic algorithm techniques. 3. Gain knowledge on various function of Neural network 4. Evaluate approach to fuzzy logic and different fuzzy systems. 5. Examine different modelling techniques using neurofuzzy.
9.	17MITC09	Internet and Web Programming	1. Enumerate thefundamental techniques necessary for the development of web-based applications 2. Apply markup languages and stylesheets for processing, identifying, and presenting information in web pages. 3. Use scripting languages to transfer data and add interactive components to web pages. 4. Understand the different levels of document object model and their events. 5. Design a well formed and valid XML document.
10.	17MITC10	Open Source Technologies	1. Choose appropriate open source software for the given problem. 2. Analyze various open source Technologies. 3. Correlate Perl, Python and PHP programming 4. Develop programs using PHP. 5. Create database applications using PHP and MySQL
11.	17MITC11	Web Technologies-Practical II (Open Book)	1. Create web pages using several technologies such as HTML, CSS, XML, XSLT and DHTML 2. Construct and debug simple python programs. 3. Make use of data structures such as lists, tuples, and dictionaries. 4. Develop python programs with conditionals and loops. 5. Understandfile handling operations
12.	17MITC12	Open Source –	1. Validate input using PHP.

		Practical III	2. Construct cookies and sessions. 3. Develop Web applications using PHP and MYSQL. 4. Create tables and Test various MySQL database queries. 5. Establish PHP and MYSQL database connectivity.
13.	17MITC14	Technical Communication	1. Read, understand and trace the fundamentals of effective listening and writing. 2. Implement effective listening. 3. Relate and apply presentation strategies. 4. Assess the group communication. 5. Demonstrate using technical description
14.	17MITC15	Big Data Analytics	1. Analyze the difference between structured, semi-structured and unstructured data. 2. Summarize the challenges of big data and how to deal with the same 3. Recognize the significance of NoSQL database 4. Formulate about Hadoop Ecosystem and MapReduce programming 5. Distinguish between Pig and Hive
15.	17MITC16	Information Security	1. Explore about attacks and gain ideas of handling it. 2. Establish a view about mathematical concepts and key distribution methods. 3. Compare different security techniques and identify the benefits. 4. Acquire opportunity to learn about various securities. 5. Develop knowledgein detail and ensure ideas about security standards, intrusion, wireless security and secured routing.
16.	17MITC17	Digital Image Processing	1. Understand the principles and application of digital image processing. 2. Gain knowledge on properties and various image transformation techniques. 3. Evaluate various image enhancement and restoration techniques. 4. Analyze various compression techniques and standards. 5. Use different segmentation approaches to digital image processing
17.	17MITC18	Data Analytics - Practical IV	1. Differentiate betweenstructured, semi-structured and unstructured data. 2. Summarize the challenges of big data and how to deal with the same 3. Understand the significance of NoSQL databases. 4. Manipulate in Hadoop Ecosystem and MapReduce programming 5. Prioritize Pig and Hive systems.
18.	17MITC19	Mobile Application Development - Practical V	1. Design and create Androidapps. 2. Write simple GUI applications 3. Use built-in widgets and components.

			4. Design application to work with the database. 5. Create an Application for Simple Mobile Game.
19.	17MITC20	Software Project Management(Self Study)	1. Describe the basics of project planning. 2. Relate and apply project evaluation and approach. 3. Extend the software estimation to project planning. 4. Demonstrate how to manage risk and resource allocation. 5. Infer the software quality
20.	17MITI01	Cyber Forensics	1. Describe the essential computer forensic technologies, services and vendors in the field of digital forensic science. 2. Demonstrate knowledgein numerous forensic tools and utilization of tools for data recovery and image verification procedures. 3. Identify the significance of a systematic procedure to investigate electronic data in order to discover digital evidence of unlawful activity. 4. Managewith threats relatedto security and information warfare 5. Procure hypothetical knowledge in many areas of computer forensic investigations.
21.	17MITM01	ICT for Learning	1. Understand the key concepts and benefits of using ICT in detail. 2. Effectively use ICT tools, software applications and digital resources. 3. IntegrateICT in to learning activities. 4. Employ online and mobile learning tools 5. Examinelegal and security issues.

School of Biosciences

Course Outcomes of Courses offered in UG/PG Programmes

Department of Botany

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BBOC01	Microbiology	6. To know the scope of microbiology 7. Knowledge about the various microbes present in the environment and their reproduction 8. Student will have a knowledge on the types of food poison and various preservative methods that can be followed to control poisoning 9. Knowledge about water-borne diseases help students to ensure cleanliness in the society 10. Student develop a knowledge on different microbial flora of soil, nitrogen fixing capacity and their use as biofertilizer 11. Knowledge on the industrial uses of microbes
2.	18BBOC02	Algae, Fungi and Lichens	1. Identification of Algae, Fungi and Lichen biodiversity based on their structure and reproduction. 2. Identification of causative organism of infected plant tissues based on morphology. 3. Knowledge on use of algae as biofertilizer, single cell protein, biofuel and so on. 4. Knowledge on use of Fungi as antibiotic, in fermentation process and so on 5. Knowledge on the economic importance of algae and fungi
3.	18BBOC03	Practicals I – Microbiology, Algae, Fungi and Lichens	1. Familiarize with the morphological and systematic knowledge about different plant groups. 2. Ability to identify lower forms of plants such as algae and fungi 3. Gain knowledge to differentiate pathogenic and non-pathogenic forms of algae and fungi 4. Identification of various types mentioned in the syllabus from fresh / preserved specimens and prepared slides. 5. Knowledge on the structure of lichens
4.	18BBOC04	Bryophyta and Pteridophyta	1. Knowledge on the lower primitive groups of plants 2. Gain knowledge about structure (Morphology and anatomy) and reproduction of Bryophytes and Pteridophytes 3. Understand the phylogeny from Bryophytes

			4. Understand the stelar evolution and seed formation habit in pteridophytes 5. knowledge about life cycles of Bryophytes and Pteridophytes
5.	18BBOC05	Gymnosperms and Palaeobotany	1. Understand the salient features of naked seeded plants (Gymnosperms) 2. Learning the differences between ferns, gymnosperms and angiosperms 3. Gain knowledge about structure (Morphology and anatomy) and reproduction of Gymnosperms 4. Identify the importance of fossils and fossilization process 5. Obtain knowledge in various fossil forms
6.	18BBOC06	Practicals II – Bryophytes, Pteridophytes, Gymnosperms and Paleobotany	1. Knowledge on the basic concept of different plant groups and their phylogeny. 2. Systematic knowledge about Bryophytes, Pteridophytes and Gymnosperms. 3. Ability to identify the different plant groups. 4. Gains knowledge on the anatomical features of the various form given in the syllabus. 5. Acquire knowledge on the fossil forms.
7.	18BBOC07	Plant Morphology	1. This programme will enable the student to identify and classify flowering plants. 2. At the end of the course the student can investigate the functions of various of the flowering plants 3. Student will be able to identify the structure, modification and special features seen in different parts of plants 4. The knowledge obtained by the student reproductive system of plants will help them to ease of identifying plant families in future. 5. Students will be able to describe pollination seen in plants which will help them for plant breeding techniques. 6. The knowledge on seed germination will help his/ her to classify plants.
8.	18BBOC08	Taxonomy and Economic Botany	1. Gain knowledge of vascular plants and their classification. 2. Obtain knowledge on the techniques of identifying plants. 3. Enable the students to namingand preserving plants. 4. Gain knowledge about description of plants. 5. Understand the relationship between families. 6. Understand the economic importance of different plants
9.	18BBOC09	Practicals III – Plant Morphology and Taxonomy of	1. Familiarize with the morphological and systematic knowledge about different plant groups.

		Angiosperms	2. Provides skill in structural characteristics of various plant parts. 3. Aquires knowledge on economically important plant parts 4. Basic concepts of Plant Systematics and its Role in Classification. 5. Apply the taxonomic principles for preparing Herbarium.
10.	18BBOI 05	Discipline specific Elective Course DSE-III Computer Applications in Botany (Botany)	1. Understand the history of computers 2. Understand the various peripheral devices in a computer 3. Apply the knowledge of ms word 4. Calculations of various types using formulas in MS excel 5. Creating presentations with tables, charts and animation 6. Acquire basic knowledge about internet and can create mails
11.	18BBOC10	Cell Biology	1. To resolve some of the mysteries of the living cell making the discipline of the living cell fascinating. 2. To understand the external membranous structure and function of living cell. 3. To gain knowledge about the primary functional organelles of plant cell. 4. To learn the basis of genetic hereditary at cellular level. 5. To study the process of life through cell cycle. 6. To enable the students to understand basic functions and pathways insides cell
12.	18BBOC11	Anatomy and Embryology	1. Gain knowledge about plant cells, tissues and their functions. 2. Identify and compare internal structural differences among different taxa of angiosperm. 3. Understand the secondary growth patterns of root and stem. 4. Know the structure and development of male and female gametophyte. 5. Gain knowledge about process of fertilization. 6. To compare the functions and morphological characters of monocot and dicot embryos.
13.	18BBOC12	Practicals IV- Cell Biology, Anatomy and Embryology	1. To understand the external membranous structure and function of living cell 2. To compare the functions and morphological characters of monocot and dicot embryos. 3. Understand the secondary growth patterns of root and stem. 4. Understand the secondary growth anomalous structures in plants 5. Know the structure and development of male and

			female gametophyte
14.	18BBOC13	Genetics	1. Provides knowledge on the basic principles of Genetics 2. Analyse the quantification of heritable traits in families and populations 3. Understand the genetic mechanisms and provides insight into cellular and molecular mechanisms. 4. Understand the role of genetic mechanisms in evolution 5. Knowledge on the modern concept of genes.
15.	18BBOC14	Plant Breeding and Seed Technology	1. Enhance knowledge on plant improvement through breeding aspects 2. Gain knowledge about selection methods and their application 3. Demonstrate the different crop improvement methods 4. Explain the seed formation and seed germination technique 5. Know the seed certification methods 6. Understand different types of seed production
16.	18BBOC15	Phytopathology	1. Identify the different types of infectious and non - infectious agents 2. Classify the various types of symptoms 3. Understand plant diseases and its control measures 4. Gain knowledge about quarantine organizations and its laws 5. Identify the causal organisms based on their symptoms 6. Gain knowledge on organic and inorganic control measures and disease resistant host
17.	18BBOC16	Plant Physiology and Biometrics	1. To understand the various functions of plants. 2. To gain knowledge about the various aspects of physiological processes in plants 3. To know about the biochemical and metabolic aspects of plants. 4. To study the hormonal and induction patterns in plants. 5. To understand the physiology behind flowering and fruiting 6. To learn the methods of data collection and the application of statistics in solving biological problems.
18.	18BBOC17	Practicals V - Genetics, Plant Breeding, Seed Technology, Phytopathology and Plant Physiology	1. Knowledge on Basic concepts of Mendel 2. Practical knowledge on different crop improvement methods 3. Understand different types of seed production 4. Acquires knowledge on seed germination technique 5. Ability to identify different pathogens from

			diseased plants 6. To gain knowledge about the various aspects of physiological processes in plants
19. .	18BBOC18	Organic Farming **(**Self study**)**	1. Know the role of macro and micro nutrients in plant growth and development 2. Gain the knowledge of different types of green manures 3. Understand recycling technique of organic materials 4. Know the importance of composting 5. Understand biological method of pest control 6. Understand the application of science to community
20.	18BBOC21	Plant Biochemistry	1. Knowledge on the basic structure and function of carbohydrates, lipids and proteins 2. Provides deep understanding of metabolic processes in plants 3. Knowledge on vitamins, minerals and enzymes 4. Gains knowledge on the role of different biosynthetic pathways in plant growth and development 5. Knowledge on the importance of secondary metabolites to plant growth
21.	18BBOC22	Plant Biotechnology	1. Knowledge on aseptic conditions to be maintained in tissue culture lab and about the nutrient media used. 2. Knowledge on totipotency of a cell and their differentiation by using plant growth hormones 3. Knowledge on producing haploids 4. Knowledge on production of secondary metabolites **5.** Knowledge on gene transfer techniques in plants
22.	18BBOC23	Molecular Biology	1. Gain Knowledge on basic structure of Nucleic acids, their structure and occurrence in different cell organelles 2. Gain knowledge on DNA replication and the enzymes involved 3. Gain knowledge on types of RNA and their functions 4. Knowledge on the mechanism of protein synthesis 5. Students gain knowledge on DNA damage and repair mechanism 6. Able to gain knowledge on all aspects of nucleic acids and their function
	18BBOC24	Genetic Engineering	1. The students able to gain in-depth knowledge on genetic engineering 2. Gain knowledge on DNA sequences and their analysis 3. Knowledge on the use of various techniques used in genetic engineering

			4. Knowledge on DNA finger-printing technology and their applications 5. Students gain knowledge on gene transfer technology 6. Able to gain knowledge on monoclonal antibodies
23.	18BBOC25	Phytogeography, Evolution and Bioinformatics	1. To investigate the relationship between systematics and biogeography 2. Exposure of plant forms with regards to evolution. 3. Understand the various bioinformatics tools 4. Analyze sequence alignments using various bioinformatics tools 5. Analyze the phylogenetic alignment using tools 6. Understand the basic knowledge of genomics 7. Analyze the protein structure and its prediction
24.	18BBOC26	Practicals VI - Plant Biochemistry, Plant Biotechnology, Molecular Biology, Genetics Engineering, Phytogeography, Evolution and Bioinformatics	1. Analyze the biochemical components from plant sample 2. Knowledge on the application aspects of Biotechnology 3. Knowledge on various soil parameters 4. Helps to understand evolutionary theories. 5. Analyze the nuclei acid, sequence alignment and protein structure prediction
25.	18BBOO01	Herbal Cosmetics	1. Knowledge on cultivation and propagation techniques of herbal plants 2. Acquires knowledge on herbs and their usage in hair and skin protection 3. Knowledge on recognition, collection and preservation of medicinal plants. 4. Understands the biological effects of medicinal plants 5. Knowledge on possible application of medicinal plants and derivatives as health products, including the food and cosmetics sectors
26.	18BBOV01	Mushroom cultivation	1. Enable the learner to get the nutritional and medicinal value of mushroom 2. Scientific data on mushroom and types of mushroom will be enlightened to the learners 3. Theoretical and practical understanding on the methods of cultivation of the selected mushrooms 4. Will emerge the learner as an entrepreneur in mushroom industry 5. Knowledge on possible application ofmushroomsin medicines, health and food products.
27.	18BZOI04	DSE- I Diversification of Plants	1. Obtain the knowledge on different classes of algae by studying one type species. 2. Obtain the knowledge on important genera of Fungi and Bryophytes. 3. Obtain the knowledge on important genera of

			Pteridophytes and Gymnosperms 4. Gain knowledge on morphology of reproductive structure of plant 5. Gain knowledge on taxonomically important plants.
	18BZOI05	DSE- I Practicals IDiversification of Plants	1. Ability to identify lower forms of plants such as algae and fungi 2. Systematic knowledge about bryophytes, pteridophytes and gymnosperms 3. Familiarize with the morphological and systematic knowledge about different plant groups. 4. Provides skill in structural and functional characteristics of various plant parts 5. Basic concepts of Plant Systematics and its Role in classification.
28.	18BZOI06	DSE- II Diversification of Angiospermsto	1. Gain Knowledge on basic structure and functions of Plant cell organelles 2. Gain knowledge on structure and types of plant reproductive organs 3. Gain knowledge on anatomy of angiosperms 4. Knowledge on plant physiology 5. Students gain knowledge on plant classification based on their environment 6. Gain knowledge on basic plant genetics and breeding
	18BZOI07	DSE- II Practicals II- Diversification of Angiospermsto	1. Knowledge on the embryological stages of plants and their development 2. Analyze the anatomy in relation to basic structure of Plants 3. Acquire knowledge on physiological response of plants to various factors 4. Acquire knowledge on plant adaptations 5. Knowledge on Basic concepts of Mendel

M. Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MBOC01	Microbiology	1. Basic knowledge on classification of bacteria and virus. 2. Basic knowledge on morphology and reproduction of bacteria and virus 3. Gain knowledge on microbial media preparation and identification using staining techniques 4. Knowledge on types of microbial interaction 5. Knowledge on application of microbes in food industry and also in biodegradation of environmental

			pollutants.
2.	17MBOC02	Plant Biodiversity-I (Phycology,Mycology & Bryophytes)	1. Understand the morphological diversity of algae, fungi and Bryophytes 2. Know and evaluate the evolution of algae, Fungi and Bryophytes 3. Observe vegetative and reproductive parts of various life forms of algae, fungi and bryophytes 4. Understand the application of economic importance of algae and fungi 5. Evaluate the useful and harmful activities of algae, fungi and bryophytes 6. Assessment of algae and fungi which are having industrial application
3.	17MBOC03	Plant Biodiversity II (Pteridophytes, Gymnosperms &Paleobotany)	1. Understand the morphological diversity of Pteridophytes and Gymnosperms 2. Know and evaluate the evolution of Pteridophytes and Gymnosperms 3. Observe vegetative and reproductive parts of various life forms of Pteridophytes and Gymnosperms 4. Understand the application of economic uses of Pteridophytes, Gymnosperms and fossil forms 5. Assessment of Pteridophytes and Gymnosperms which are having industrial application
4.	17MBOC04	Genetics and Plant Breeding	1. Describe and apply the principles of Mendelian genetics 2. Know the inheritance patterns in different organisms 3. Understand that the number of chromosomes characteristic to each species 4. Understand the importance of identification, isolation, function and expression of genes 5. Analyze the historical evolution of plant breeding, which have been the key to scientific and technical advances 6. Acquire combined knowledge
5.	17MBOC05	Practical – I (Microbiology & Plant Biodiversity-I)	1. Basic knowledge on morphology and reproduction of bacteria and virus 2. Observation of morphological characteristics of mould fungi and motility of Bacteria (Hanging Drop technique). 3. Gain knowledge on microbial media preparation and identification using staining techniques 4. Observe vegetative and reproductive parts of various life forms ofalgae, fungi and bryophytes 5. Enrich their knowledge and skills in identifying the specimens
6.	17MBOC06	Practical – II (Plant Biodiversity-II&Genetics and Plant Breeding)	1. Describe the Morphology and Anatomy characters of Pteridophyte and Gymnosperm 2. Understand the Reproduction and evolutionary trends in Pteridophytes and Gymnosperm

			3. Learning the mounting techniques of various biological specimens 4. Enrich their knowledge and skills in identifying the specimens 5. Identifying the importance of fossils in tracing evolution 6. Describe and apply the principles of Mendelian genetics
7.	17MBOC07	Embryology and Tissue Culture	1. Students gain knowledge on the reproductive phases of plant system. 2. Gain knowledge on origin and development of embryological structures. 3. Understand the fertilization process 4. Enable students to know the course of development the genetic constitution of embryo 5. Understand various techniques involved in tissue culture. 6. Knowledge about the various types of tissue culture namely anther & pollen, embryo & protoplast culture.
8.	17MBOC08	Anatomy of Angiosperms	1. Understand the scope and importance of Anatomy 2. Analyze various tissue system and its functions 3. Understand the vascular tissues and structure of wood 4. Analyze the difference in normal and anamoloussecondarygrowth in plants 5. Evaluate the ecological adaptations in plants 6. Perform techniques in anatomy
9.	17MBOC09	Taxonomy & Economic Botany	1. Understanding the phylogenetic relationships within the plant kingdom 2. Understand key methods and principles of biological classification and nomenclature 3. Interpret diagnostic characteristics of plant families, genera, and species 4. Understand the plant morphology terminology and ecologically distinguish plant genera or families. 5. Develop a basic knowledge of taxonomic diversity and important families of useful plants 6. Application of economic uses of plants in modern society
10.	17MBOC10	Practical–III(Embryology, Tissue Culture and Anatomy of Angiosperms)	1. Gain knowledge on origin and development of embryological structures. 2. Understand various techniques involved in tissue culture. 3. Knowledge about the various types of tissue culture protocols 4. Analyze the difference in normal primary, secondary and anamolous secondary growth in plants by proper sectioning 5. Perform techniques in anatomy

11.	17MBOC11	Practical – IV (Taxonomy & Economic Botany)	1. Understand key methods and principles of biological classification and nomenclature 2. Interpret diagnostic characteristics of plant families, genera, and species 3. Application of the plant morphology terminology and ecologically distinguish plant genera or families. 4. Develop a basic knowledge of taxonomic diversity and important families of useful plants 5. Acknowledge the economic uses of plants in modern society
12.	17MBOI01	Interdisciplinary Course Microbial Technology and Herbal Drugs	1. Apply the learnt knowledge of culturing microorganisms 2. Understand and apply the staining techniques for identification of microorganisms 3. Understand the various types of drugs 4. Analyze various secondary metabolites present in plants through preliminary screening tests 5. Analyse the various natural colourants and their principle 6. Evaluate few nutritive and non nutritive sweeteners
13.	17MBOC13	Cell and Molecular Biology	1. Understand cell structure and it functions 2. Gain knowledge about cell organelles and its chemical composition 3. Demonstrate the structure of chromosomes and cell division patterns 4. Understand in detailed mechanism of DNA Replication 5. Gain knowledge on the mechanism of protein synthesis 6. Extent the knowledge about RNA processing and editing
14.	17MBOC14	Plant Physiology	1. Fundamental understanding of morpho-physiological mysteries seen in plants. 2. Enable the students to grasp the functional aspects of plants. 3. Advanced scientific knowledge of the physiological and biochemical processes seen in plants 4. Detailed functional information about plant growth and related plant growth regulators. 5. Students are enabled to acquire knowledge on seed physiology and its technical aspects
15.	17MBOC15	Plant Biochemistry	1. Knowledge on the components of a cell and chemical bonding 2. Knowledge on the importance of primary plant metabolites of the plant 3. Understand the biochemistry of plant growth and development 4. Have an understanding on vitamins and minerals present in plants 5. Knowledge on the secondary metabolites and its

			significance
16.	17MBOC16	Plant Biotechnology	1. Gain knowledge on DNA recombination and the enzymes involved in the process. 2. Gain knowledge on usage of vectors in the construction of recombinant DNA. 3. Gain knowledge on construction of genomic library and probes as raw materials for the construction of recombination. 4. Gain knowledge on DNA chips and molecular markers. 5. Gain knowledge on application of recombinant DNA technology in crop improvement.
17.	17MBOC17	Practical – V(Cell & Molecular Biology and Plant Physiology)	1. Understand cell structure and its cell organelles 2. Demonstrate the structure of chromosomes and cell division patterns 3. Enable the students to grasp the functional aspects of plants by performing experiments 4. Gains practical information about plant growth and related plant growth regulators is enriched. 5. Acquire knowledge on seed physiology and its technical aspects
18.	17MBOC18	Practical – VI(Plant Biochemistry & Plant Biotechnology)	1. Aquires knowledge on Preparation of buffers 2. Practical knowlegde on qualitative analysis of a plant 3. Knowledge on the secondary metabolites 4. Aquires knowledge on PreparationofAgarose gel electrophoresis 5. Aquires knowledge on isolation of Plasmid DNA
19.	17MBOC19	Self- study course- Ethnobotany	1. Helps to understand local classification and uses of plants including plant properties. 2. Creates an awareness of ethics and values related to ethnobotanical studies 3. Gains a wide knowledge on the medicinal aspects of plants 4. Understand the role of ethnobotanical studies in community development, sustainable land management and development 5. Knowledge on recent trends and application in Ethnobotany
20.	17MBOM01	Multidisciplinary Course- Value-Added Plant Products of Industrial Importance	1. Apply the learnt knowledge about value-added products used as food. 2. Understand the various resin products obtained from plant. 3. Understand the various types of natural dyes obtained from plant sources. 4. Analyze various essential oils used as perfume and for hair growth. 5. Analyze the various edible oils from plant sources. 6. Evaluate need and use of various industrial products like, industrial oils, Biodiesel and cleanser.

21.	17MBOC21	Bioinstrumentation &Biostatistics	1. Ensured practical knowledge on the various principles of advanced instruments for research. 2. Implementation of plant research and exploration of technologies for the post graduate. 3. Enhance the quality of research through numerical analysis and statistics. 4. From the application aspects of techniques to the work at publication level at international is achieved. 5. Technical skills of the students are enriched.
22.	17MBOC22	Environmental Science and Phytogeography	1. Knowledge on the importance of environment is elucidated 2. Understanding on the various principles and relationships between the plants and environment is unraveled. 3. Exposure to global issues like pollution and disasters to environment is given. 4. Enable the students to enrich the aspects of phytogeography. 5. Awareness to the save greenery
23.	17MBOC23	Open Book	1. Gain knowledge on genetically modified plant 2. Gain knowledge on copyright and trademarks. 3. Gain knowledge on types of patents and the procedure for patenting. 4. Gain knowledge on intellectual property right for plant breeders. 5. Gain knowledge on plant patents

M.Phil/ Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPBO01/ 19PHBO01-	Research Methodology and Biostatistics	1. Propose and distinguish appropriate research designs and methodologies to apply to a specific research project 2. TEM, SEM, XRD and FTIR operation and procedures for collecting and interpreting images 3. Expertise the students in separation, analysis and isolation of bioactive compounds 4. Descriptive statistical methods used to interpreter the laboratory data . 5. Inferential statistical methods expertise the students in field oriented studies
2.	19MPBO002 / 19PHBO002-	Advances in Plant Biotechnology	1. Understand the fundamentals of Recombinant DNA Technology 2. Know the molecular biology in relation to genetic material, its inheritance, modification, replication and repair 3. Know the transgenic technology for the

			improvement of quality and quantity of genetically modified plants. 4. Learn about the extra-chromosomal inheritance in plant system and application of protoplast culture in crop improvement. 5. Understand the history of computers, various peripheral devices and applications of MS- Office
3.	19MPBO03A	Techniques for Sustainable Agriculture	1. Understand the application of various bio-fertilizers 2. Know the methods of organic farming and integrated nutrient management system. 3. Learn about the various aspects of nutrition in plants. 4. Knowledge on the biochemical and phytochemical components of the plant 5. Practical implementation of nanoparticles in agriculture
4.	19MPBO03B	Enzyme Technology	1. Acquire knowledge on characteristics of enzymes and factors affecting its activity. 2. Understand the structural properties of enzymes. 3. Gains knowledge on the enzyme kinetics and its application 4. Practical Knowledge on the advances in protein techniques 5. Acquires knowledge on the applications of enzymes
5.	19PHBO03A	Phytochemistry	1. Acquire knowledge on different system of medicine in India. 2. Gain knowledge on extraction and purification methods 3. Understand the properties of the secondary metabolites 4. Knowledge on the biological activities of secondary metabolites 5. Practical implementation of the Pharmacognostic analysis in drug discovery
6.	19PHBO03C	Medicinal Plants	1. Acquire knowledge on different system of medicine in India. 2. Create awareness on the cultivation and harvesting process of medicinal plants 3. Gain knowledge on methods of standardization and evaluation 4. Understand and practice different analytic techniques to prepare herbal extract 5. Acquire advanced scientific knowledge in nanotechnology field

Department of Zoology

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BZOC01	Invertebrata I	1. Describe common and distinctive features of invertebrate organisms including protozoans, poriferans, coelenterates, platyhelminthes and nematodes 2. Explain phylogenetic relationships between the phyla covered 3. Discuss important concepts in invertebrate organization including body symmetry, body cavity, gut formation and segmentation 4. Describe important biological processes in invertebrates including locomotion, body support, feeding and digestion, excretion and osmoregulation, respiration, circulation, sensory perception and behavior reproduction and development 5. Discuss the parasitic, ecological adaptation and economic importance of invertebrates
2.	18BZOC02	Invertebrata II	1. Gain knowledge on the basic organization of annelids, arthropods, molluscs and echinoderms 2. Recognize the general characters, distinctive features of taxonomic classes 3. Understand the salient features and economic importance of invertebrates studied 4. Understand the ecological adaptations of larval forms 5. Know the significance of larval forms
3.	18BZOC03	Practicals I-Invertebrates	1. Able to dissect and examine various organ systems in situ. 2. Acquire basic skills in animal dissections. 3. Be familiar with the external morphology of animals by observing the preserved specimens. 4. Know how to culture some protozoans 5. Gain knowledge on virtual dissections
4.	18BZOC04	Chordata I	1. Portray the origin and ancestry of chordates and basic principles of chordate classification 2. Gain knowledge on fundamental chordate characters 3. Understand interrelationship of primitive pro-chordates with invertebrates and vertebrates 4. Gain knowledge on fishes and their economic importance 5. Gain knowledge on migration and parental care among animals
5.	18BZOC05	Chordata II	1. Knowledge on animal adaptations to environment

			2. Understand the salient features of major groups within phylum chordata 3. Understand the external and internal anatomy of chordates 4. Know the comparative anatomy of chordates 5. List out the economic importance of reptiles, birds and mammals
6.	18BZOC06	Practicals II - Chordates	1. Identify visceral organs of fishes in situ 2. Able to identify marine and fresh water, food and ornamental fishes 3. Gain basic training in virtual dissections 4. Know about museum specimens and their salient features 5. Assess the adaptive features of beak and feet of birds
7.	18BZOI03	DSE-II - Computer Applications in Zoology	1. Understand the basics of handling computers and utilize it for creating and storing the data. 2. Competent to handle the virtual dissection with the basic knowledge of computers. 3. Able to present the information by using power point presentations. 4. Benefit and utilize the internet for mining information and sharing it via e-mails. 5. Able to create and publish webpage and write blogs.
8.	18BZOC07	Cell Biology	1. Understand different types of microscopic techniques and sample processing to label and identify subcellular structures in fixed and live cells 2. Describe the structure and functions of the plasma membrane, transport across cell and 3. cell-cell communication 4. Portray the intricate relationship between various cellular structures and their corresponding functions 5. Be able to describe the structure and functions of nucleus with reference to special chromosomes 6. Research specific scientific topics and present the information to peers
9.	18BZOC08	Molecular Biology	1. Be able to explain how DNA provides a mechanism for heredity 2. Understand structure of nucleic acids and basic concepts of protein synthesis 3. Describe the molecular mechanisms behind DNA replication in prokaryotes and eukaryotes 4. Comprehend RNA synthesis and processing, and protein synthesis 5. Apply basic concepts of cell and molecular biology to relevant problems
10.	18BZOC09	Practicals III - Cell and Molecular Biology	1. Acquire practical skills in undertaking simple immunological experiments that mimic those undertaken in diagnostic and research laboratories.

			2. Coherently report in a written document using the appropriate language of the field 3. Understand the principle and operation of relevant laboratory equipment. 4. Evaluate laboratory test outcomes and determine the validity of the test results obtained. 5. Perform experiments using techniques for isolation and separation of biomolecules
11.	18BZOC10	Genetics	1. Understand the basic principles of inheritance in animals 2. Gain knowledge on the interactions of genes 3. Understand the inheritance of linked genes and recombination of genes 4. Assess the role of chromosomes in sex determination and inheritance of X and Y linked genes 5. Construct personal and family pedigrees and integrate genetic testing options in genetic counselling practices
12.	18BZOC11	Evolution	1. Understand the history and development of evolutionary thoughts. 2. Able to list and describe the evidence for evolution and its required corollaries. 3. Describe the mechanism of evolution and fossil formations. 4. Explain the isolation, speciation and their significance. 5. Able to trace the trends in the evolution of man
13.	18BZOC12	General Entomology	1. Understand the various types of insects 2. Knowledge on the structure and functions of insect body parts 3. Functioning of organ system of animals 4. Identification of pests of agricultural and medical importance 5. Explicate the various types of pest control practices
14.	18BZOC13	Practicals IV - General Entomology	1. Understand the internal and external features of cockroach 2. Knowledge on the structure and functions of insect body parts 3. Acquiring information on research institutions through field visits 4. Identification of pests of agricultural and medical importance 5. Develop the keys for the identification of different types of insects
15.	18BZOC14	Biochemistry	1. Understand the chemical nature and functions of biological macromolecules 2. Knowledge on the metabolism of biomolecules 3. Firm foundation in the fundamentals and application of biomolecules

			4. Describe and predict the atomic structure, chemical bonding and the acid- base reactions 5. Have basic information on enzymes
16.	18BZOC15	Animal Physiology	1. Understand the physiological processes that regulate body function and their regulation. 2. Know about the organs of respiration and structure of the heart. 3. Know the anatomy of different physiological system and their specific functions. 4. Able to understand the different types of receptors and muscle contraction. 5. Describe physiology of reproduction and hormonal regulation
17.	18BZOC16	Biostatistics	1. Understand the basic concept and application of biostatistics. 2. Know about the methods of data collection and techniques of sampling. 3. Understand the process of classification and tabulation of data. 4. Know about the diagrammatic and graphic presentation of data. 5. Know to calculate sample statistics including central tendency, dispersion, correlation and regression.
18.	18BZOC17	Aquaculture	1. Describe the different types of fishing gears 2. Explain the various types of fish farms, designing, construction and management 3. Know and understand to manage waste water in aquaculture production systems 4. Construct, manage and maintain a fish aquarium 5. Identify the different types of ornamental fishes
19.	18BZOC18	Practicals V – Biochemistry and Animal Physiology	1. Demonstrate the common laboratory techniques used in biochemistry. 2. Infer the biochemical constituents in food samples. 3. Knowledge on the fundamental of tissue and blood. 4. Know the structure and function of human anatomy. 5. Ability to identify the models and slides.
20.	18BZOC19	Sericulture and Apiculture (Self Study course)	1. Identify and know the importance of silkworm and honey bee 2. Comprehend the methodologies involved in silkworm rearing 3. Execute self-employment in sericulture and apiculture 4. Validate different bee keeping techniques and its byproducts 5. Understand and control the pests of silkworm and honey bee
21.	18BZOC22	Microbiology	1. Describe and identify the microbial groups 2. Apply microbial techniques to solve scientific problems

			3. Assess the type of microbes in industries and food products 4. Suggest the strategy for pollutant decontamination 5. Communicate the roles of microbes in ecosystem and health-related issues
22.	18BZOC23	Immunology	1. Describe the basic mechanisms, distinctions and functional interplay of innate and 2. adaptive immunity 3. Apply immunologic techniques to solve certain clinical and research problems 4. Identify the role of antigen presenting cells, lymphocytes, and phagocytic cells in immune responses 5. Elucidate the relationship between major cellular and molecular components of the immune system. 6. Describe the basic structure of the cellular receptors and discuss their interactions during an immune response.
23.	18BZOC24	Developmental Biology	1. Acquire fundamental knowledge of animal embryonic development 2. Knowledge on the concept of Spermatogenesis and Oogenesis 3. Understand the fundamental concept of mechanism of fertilization 4. Knowledge on the development of organs 5. Awareness on the human foetal development and birth.
24.	18BZOC25	Environmental Biology	1. Understand the influence of abiotic and biotic factors on animal populations 2. Knowledge on the characteristics of population ecology 3. Describe the types and characteristics of community 4. Gain knowledge on the adaptations among animals 5. Awareness on EIA and regulations
25.	18BZOC26	Practicals VI - Microbiology and Immunology	1. Identify the unknown microbes using staining techniques 2. Recognize and explain the use of common culture media 3. Assess the microbes in food samples 4. Detect possible drug resistance in common pathogens 5. Apply the immunological techniques in clinical diagnosis
26.	18BZOC27	Practicals VII - Developmental and Environmental Biology	1. Maintain accurate records of laboratory experiments. 2. Know the different stages of development of frog a chick 3. Describe the variations of embryos of mammals 4. Identify strategies for asking good questions in biological research

			5. Apply the scientific method and quantitative techniques to describe, monitor and understand environmental systems.
27.	18BZOO01	Ornamental fish culture (Generic Elective Course)	1. Construct a fish aquarium 2. Identify the aquarium fishes suitable for home aquarium 3. Understand the culture and breeding techniques of aquarium fishes 4. Understand the various types of fish feed and feed formulation 5. Know various fish diseases, diagnosis and treatment
28.	18BBOI01	DSE-I Non-Chordates and Chordates (for B.Sc. Botany students)	1. Acquire knowledge about fundamental non-chordate and chordate characters and basic principles of classification. 2. Describe common and distinctive features of all invertebrate organisms. 3. Discuss important concepts in invertebrate organization including symmetry, body cavity and segmentation. 4. Know about the general organization of fishes, amphibian and mammals 5. Be familiar with primitive, marsupial mammals.
29.	18BBOI02	DSE I Practicals I – Non-Chordates and Chordates	1. Study the external as well as internal characters of non-chordates. 2. Ability to identify external morphology of animals by observing the slides. 3. Understand and study various systems in chordates. 4. Discuss the fundamental characters and identify the groups of chordates by observing the preserved specimens. 5. Maintain accurate records of laboratory experiments
30.	18BBOI03	DSE-II - Developmental Zoology and Animal Physiology	1. Ability to describe the processes of gametogenesis and fertilization. 2. Understand the embryonic development of frog. 3. Understand the structure and functions of the digestive systems and respiratory systems. 4. Know about the structure of the heart and its function. 5. Acquire knowledge an excretory product of animals and role of hormones in reproduction.
31.	18BBOI04	DSE-II Practicals II - Developmental Zoology and Animal Physiology	1. Maintain accurate records of laboratory experiments. 2. Know the different stages of developmental of frog 3. Describe the variations in different stages of metamorphosis of frog 4. Able to estimate the hemoglobin count and RBC count in man 5. Develop skills to carry experiment in physiology
32.	18BZOV01	Vermicomposting	1. Understand the external and internal features of

		(Value Added Course)	earth worm 2. Knowledge on the methods of vermicomposting 3. Acquire information on vermiculture , vermi-cast and vermin-wash 4. Explicate the difference between organic and chemical farming 5. Able to practice vermicomposting

M. Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	17MZOC01	Functional morphology of Invertebrates	1. Describe the variety of invertebrate organisms and explain their evolutionary origin and diversification. 2. Investigate invertebrates in laboratory and field conditions, and identify major taxonomic groups. 3. Describe the functional significance of associated morphologies and behaviours. 4. Differentiate major patterns by which invertebrates carry out critical functions 5. Outline key morphological characters of the major invertebrate taxa.
2.	17MZOC02	Functional morphology of vertebrates	1. Understand the basic principles of vertebrate classification identify and describe the salient features of major vertebrate groups. 2. Explore the role of integument and its derivatives in major vertebrate groups. 3. Asses the evolution and ecological adaptations of respiratory organs from fish to mammal. 4. Understand the evolution of circulatory and excretory system and assess their evolutionary significance. 5. Summarize the reproductive system including accessory reproductive glands and their functions
3.	17MZOC03	Cell and Molecular Biology	1. Understand transport across cell, cell-cell communication and mechanisms of signal transduction. 2. Outline the processes that control eukaryotic cell cycle. 3. Conceptualize and describe vesicular trafficking of secretory proteins and cell secretions. 4. Represent and illustrate the structural organization of genes and the control of gene expression 5. Understand and apply general concepts of cell and molecular biology to relevant, specific problems
4.	17MZOC04	Genetics	1. Discuss Mendelian inheritance and deviations from Mendelism including complementary, supplementary, epistatic, lethal and cumulative genes and inheritance of ABO blood group and Rh

			factor 2. Understand genetic principles of linkage and crossing over which explain the occurrence of parental and non-parental combinations in offsprings and construction of chromosomal maps 3. Assess the role of chromosomes in sex determinationand inheritance of X and Y linked genes 4. Construct relevant, targeted and comprehensive personal and family histories and pedigrees and integrate genetic testing options in genetic counseling practice 5. Explain genetic anomalies caused by changes in chromosome Number and merits and demerits of inbreeding and outbreeding practices
5.	17MZOC05	Practicals I – Invertebrates and vertebrates	1. Introducing the structure, function and behavior of select invertebrate types through the observation of simulated animal dissections. 2. Reinforcing basic laboratory skills including microscopy, simulated 3. animal dissection and careful observation 4. Providing with the ability to recognize the major groups of invertebrate 5. Record the fauna and flora of different phylum and families through the visit to Gass Museum 6. Learn the keys for the identification of bird watching through the visits to Salim Ali centre for ornithology and Silent valley
6.	17MZOC06	Practicals II – Cell biology, Molecular biology and Genetics	1. Understand transport across cell, cell-cell communication and mechanisms of signal transduction. 2. Outline the processes that control eukaryotic cell cycle. 3. Conceptualize and describe vesicular trafficking of secretory proteins and cell secretions. 4. Represent and illustrate the structural organization of genes and the control of gene expression 5. Understand and apply general concepts of cell and molecular biology to relevant, specific problem
7.	17MZOC07	Biochemistry	1. Gain knowledge on the basic structure and functions of biomolecules 2. Understand the metabolic pathways and their regulatory mechanisms 3. Apprehend the special properties of water and the influence of aqueous environment on the behavior of biological macromolecules 4. Acquire fundamental knowledge on enzymes and enzyme kinetics 5. Understand the physical and the chemical properties of organic functional groups and chemical bonding

			of molecule
8.	17MZOC08	Animal Physiology and Endocrinology	1. Understand the physiological processes that regulate body functions and the regulation of an organ system from the molecular to animal level 2. Be able to describe interactions between different organ systems 3. Know the anatomy of different physiological systems and their specific functions 4. Understand the principles of hormone action, including structure, mechanism of release from endocrine cell, mode of transport in blood, mechanism of action in target cells, and systemic effects of important hormones. 5. Understanding of factors influencing the adaptations and responses of organisms to particular environments
9.	17MZOC09	Developmental Zoology	1. Describe and compare the developmental stages which occur in a variety of animal phyla. 2. Explain the mechanism of fertilization, cleavage and gastrulation. 3. Describe the nuclear control of developmental and cytoplasmic control of nucleus development 4. Explain what stem cells are and their potential applications. 5. Understand the human menstrual cycle, implantation, parturition, birth defects and test tube baby
10.	17MZOC10	Bioinformatics	1. Locate and use the main databases at the NCBI and EBI resources and know the difference between databases, tools, repositories and be able to use each one to extract specific information 2. Extract data from specific databases using accessions numbers and gene names 3. Be capable of performing simple sequence analyses using existing tools 4. Interpret correctly the outputs from tools used to analyse biological data and make meaningful predictions from these outputs. 5. Able to describe and comprehend the fundamental concepts of molecular modeling and computational driven drug discovery
11.	17MZOC11	Practicals III – Biochemistry, Animal Physiology, Endocrinology and Developmental Zoology	1. Assess the estimation of protein, carbohydrate and fat using fundamental biochemical principles. 2. Estimation of different physiological systems and their specific functions. 3. Identify the factors influencing the and responses of organisms. 4. Describe fundamental concept of molecular mechanisms of embryological stages

12.	17MZOC13	Environmental Biology and Toxicology (Open Book)	1. Learn about various global and regional environmental concerns that affect various forms of life. 2. Appreciate the impact of human activities on other life and the environment. 3. Learn about the significance of native biodiversity and need for its conservation. 4. Investigate specific cases of environmental pollution or natural challenges, and their impacts 5. Learn about the applications of various fields of science, including chemistry, biology, molecular biology, toxicology and microbiology in the above contexts.
13.	17MZOC14	Microbiology	1. Understand the structure and classification of microbes 2. Apply culture techniques in clinical and research problems 3. Describe the cultural use of microbes in industries 4. Understand the use of microbes in environmental sector 5. Identify the integral role of microbes in pathogenesis and its control measures
14.	17MZOC15	Immunology	1. Describe the cell types and organs that are involved in immune response 2. Apply immunological techniques to solve certain clinical and research problems 3. Able to differentiate between various types of hypersensitivity reactions 4. Identify the main mechanisms of immune tolerance and autoimmunity 5. Explain adverse functions of these cellular and molecular components during abnormal circumstances
15.	17MZOC16	Biotechnology	1. To provide education that leads to comprehensi understanding of the principles and practices biotechnology. 2. Provide examples of current applications biotechnology and advances in the different areas li medical, microbial, environmental, bioremediatic agricultural, plant, animal, and forensic 3. Explain the concept and application of monoclor antibody technology 4. Interpret current knowledge and skills to new methods in biotechnology as it is a rapidly evolving field. 5. Demonstrate working knowledge in a defined skill set of biotechnology protocols, including Southern blotting, Northern blotting, In-situ hybridisation,

			DNA Sequencing, PCR, DNA Probes, RFLP, RAPD
16.	17MZOC17	Evolution	1. Understand the various contemporary observations of biological evolution. 2. Knowledge and skills in phylogenetic analysis and how this can be used to study *molecularevolution* 3. Analyse the role of observation, pattern, experimentation and modelling in the generation and testing of evolutionary hypotheses. 4. Describe of evolutionary information the fossil record provides and how we know that it is reliable. 5. Investigate the evolutionary basis of behavior in animals, including primates and man.
17.	17MZOC18	Practicals IV – Microbiology, Immunology and Biotechnology	1. Able to isolate and identify microbes 2. Analyze the pathogenicity of disease causing microorganisms 3. Execute immunological techniques to solve clinical problems 4. Assess the biosorbents that clean environment 5. Apply biotechnological methods in research sectors
18.	17MZOC19	Economic Zoology (Self-Study)	1. Apply the knowledge on bee biology and management to the development of the bee industry in tropical environments. 2. Acquire knowledge about the rearing of silkworm and causative agents of silkworm diseases. 3. Understand various methods of culturing fishes in pond. 4. Able to asses and identify the degradable solids according to moisture content and using vermicomposting technique 5. Describe poultry breeds and basic concepts related to vaccines.
19.	17MZOC21	Biostatistics and thesis writing	1. Demonstrate the ability to analyze data by interpreting a statistical model. 2. Knowledge on implementation of hypothesis in validating a model. 3. Understand derivation and distribution of linear and quadratic data. 4. Utilize the formulae and test to substantiate the research output. 5. Summarize data and draw valid inference.
20.	17MZOI01	Introduction to Animal Experimentation (IDC)	1. Demonstrate and learn the functions of human system through model organisms. 2. Understand the rearing of laboratory animals 3. Knowledge on toxicological screenings 4. Implement the ethical standards of model organisms in research 5. Ability to design drugs *In vitro* and *In vivo*
21.	17MZOM01	Conservation of Fauna	1. Understand theories in the field of Biodiversity and

		(MDC)	systematic. 2. Able to understand the distribution of floral and faunal in India 3. Study various global and regional environmental concern like floods, cyclones, tsunami etc. 4. Acquire the general principles of ecology as how they related to terrestrial and aquatic environment. 5. Apply knowledge to solve problems related to wildlife conservation and management.

M. Phil & PhD			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPZ001/ 19PHZ001	Research Methodology for Zoology	1. Acquire knowledge in basic statistical tools and its applications in relevant research problems 2. Demonstrate the ability to analyze data by appropriately fitting, assessing, and interpreting a variety of statistical models 3. Gain skills to identify the relevant research design to solve problems in biology 4. Use and interpret results of, the principal methods of statistical inference and design 5. Able to write research paper by understanding the research ethics and copy rights
2.	19MPZ002/ 19PHZ002	Advanced Techniques in Zoology	1. Gain basic understanding of microscopy and centrifugation in scientific research. 2. Understanding of molecular biology techniques which is a hybrid discipline of physical and natural science to study protein functions. 3. Gain wide knowledge on diagnostic techniques which are used to measure and characterize the specific immune response. 4. Acquire knowledge on the separation and analysis of biochemical components by chromatography. 5. Achieve information on electromagnetic spectrum and the applications of spectral components

Department of Biochemistry, Biotechnology and Bioinformatics

B. Sc Biochemistry and Biotechnology			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BBCC01	Chemistry of Biomolecules	1. Understand the structure and functions of biomolecules in a cell 2. Assess the nature of lipids based on their structure and functions 3. Relate the properties of biomolecules to their role in living systems 4. Understand the structure, properties and reactions of nucleic acids and aminoacids 5. Distinguish the biomolecules present in the structural composition of a cell
2.	18BBCC02	Practicals – I Analytical Biochemistry – Qualitative Analysis	1. Analyze and identify the given sugar/amino acid 2. Characterize the given fat 3. Isolate starch and glycogen 4. Analyse the reactions of cholesterol
3.	18BBTC01	Introduction to Biotechnology and Cell Biology	1. Compare the advantages of traditional and modern Biotechnology 2. Classify cell types within an organism at all levels of differentiation 3. Illustrate the different stages of cell division and cell-cell interactions 4. Interpret the different modes of cell death 5. Distinguish cellular differentiation in plants and animals
4.	18BBTC02	Microbiology	1. Gain an insight into the classification of microorganisms. 2. Identify microorganisms based on their ultrastructure. 3. Acquire the theoretical knowledge for the various methods used in microbiology. 4. Understand how microorganisms cause various diseases.
5.	18BBCI01	**DSE – I** Chemistry theory for Biochemistry and Biotechnology	1. Observing safety norms and Good Laboratory Practices 2. The theoretical basis of preparing solutions, reagents, buffers 3. Differentiating different types of chemical bonds. 4. Fundamental principles of Organic chemistry, Inorganic Chemistry and stereoisomerism 5. Basic concepts of physical chemistry
6.	18BBCI02	Chemistry practical for Biochemistry and Biotechnology	1. Analyse functional groups in organic molecules 2. Carry out acidimetry and alkalimetry 3. Perform permanganimetry 4. Undertake iodometry 5. Understand the methodology of analyzing organic molecules.

7.	18BBCC03	Techniques in Biochemistry	1. Understand the theoretical basis for the practical experiments. 2. Recognize the importance of buffer systems in pH maintenance. 3. Appreciate the principle, operation, and applications of various techniques for analyzing biomolecules. 4. Design suitable techniques for the separation of biomolecules 5. Interpret the results of analytical techniques.
8.	18BBCC04	Chemistry of Proteins	1. Appreciate the hierarchical organization of protein structure 2. Understand the classification, properties and functions of proteins. 3. Relate the structural complexity of proteins with their biological activity 4. Apply the appropriate techniques for purification and characterization of proteins 5. Analyse the amino acid sequence of proteins and relate the same to the functions of proteins
9.	18BBTC03	Biophysics	1. Understand the concept of bioenergetics and mechanism of body temperature regulation 2. Grasp the mechanism of signal transmission in neuronal cells 3. Comprehend the mechanism of light perception in eye 4. Appreciate the various spectroscopic methods used to study the biomolecular structure 5. understand the designing and functioning of modern biomedical equipment
10.	18BBTC04	Practicals – I Techniques in Biotechnology	1. Students will be able to analyse some of the biometric characteristics in plants 2. Students will be able to examine and predict the concentration of compounds in unknown solutions 3. Students will be able to explain the principles behind major separation techniques such as chromatography and electrophoresis 4. Students will be able to infer the blood grouping of different individuals and be familiar with the methods and applications of immunotechniques
11.	18BBCC05	Intermediary Metabolism - I	1. Students will be able to understand the fate of dietary constituents after digestion and absorption. 2. Students will be able to recognize the role of vitamins and mineral in intermediary metabolism 3. Students will be able to explain how diet and hormonal signaling regulate major human metabolic pathways. 4. Students will be able to recognize the role of vitamins and mineral in intermediary metabolism. 5. Students will be able torelate the role distinct metabolic pathways used by cells to harvest the

			energy.
12.	18BBCC06	Human Physiology	1. The various physiological systems in the human body. 2. The functional anatomy of different organs in each system. 3. The complex mechanisms of the processes of digestion, absorption, excretion, gas exchange, reproduction and neuromuscular coordination. 4. Integrated System physiology that will enable understanding of the biochemical basis of disease.
13.	18BBCC07	Practicals II - Enzymes	1. Identify the sources of enzymes. 2. Analyse/apply the techniques to extract and quantify the enzymes. 3. Understand the influence of Enzyme concentration, Substrate concentration, pH and Temperature on the activity of enzymatic reactions. 4. Learn the kinetics of enzyme catalyzed reactions
14.	18BBTC05	Environmental Biotechnology	1. Comprehend the various biotechnological approaches to environmental management. 2. Learn the strategies for obtaining energy from various natural sources and for energy conservation. 3. Understand the concept of bioremediation to handle environmental toxins. 4. Recognise the importance of biofertilisers and biopesticides 5. Analyze the harmful effects of waste water disposal to the environment and the biotechnological solutions.
15.	18BBTC06	Genetics	1. Explain the key concepts of Classical mendelian genetics its deviations and relationship between genotype and phenotype 2. Comprehend the relationship between linkage and chromosome mapping, and its influence on phenotype 3. Relate the structural variations of chromosomes to phenotype 4. Differentiate chromosomal structure by simple banding techniques 5. Explain the key concepts of population genetics, hardy Weinberg equilibrium, and factors influencing evolution
16.	18BBTC07	Enzymes and Enzyme Technology	1. Distinguish enzymes based on their classification and properties. 2. Optimize the conditions for the maximum activity of enzymes. 3. Understand themechanism of action of enzymes. 4. Acquire theoretical knowledge on methods of production, purification, characterization and immobilization of enzymes. 5. Appreciate the industrial and medical applications of

			enzymes.
17.	18BBCI05	**DSE – III** Computer Applications in Biosciences	1. Understand the types and functioning of computers 2. Apply in creation of folder, copying, renaming, deleting, searching, creating shortcuts, backup files using MS Windows. 3. Understand the components in data communication, compare and contrast types of networking and apply in maintenance applications of networking 4. Create their own documents and presentations using MS Word and Power Point 5. Create their own worksheet and creation of functions in Excel. Students will be able to create database tables, queries, forms and reports using Access
18.	18BBCC08	Intermediary Metabolism -II	1. Understand the fate of dietary constituents after digestion and absorption. 2. Recognize the role of vitamins and mineral in intermediary metabolism 3. Explain how diet and hormonal signaling regulate major human metabolic pathways. 4. Relate the role distinct metabolic pathways used by cells to harvest the energy.
19.	18BBCC09	Plant Biochemistry	1. Understand the basic concepts of photosynthesis 2. Explain the role of respiration and photorespiration 3. Discuss the importance of transpiration and photo assimilation biofuels. 4. Describe about stress physiology and secondary metabolites 5. Infer the different types of plant hormones.
20.	18BBCC10	Drug Biochemistry	1. Understand basics terms in drugs, routes of administration, and the classification of drugs. 2. Understand how body responds to drugs and drug responds to body. 3. Interpret the pharmacokinetics of drugs 4. Explain the biotransformation of drugs
21.	18BBTC08	Immunology	1. Gain an insight on the various cells and organs involved in the immune system. 2. Understand the molecular mechanisms of antigen-antibody interactions. 3. Appreciate the molecular mechanisms behind the immune response evoked after infection by various pathogens 4. Learn the theoretical basis for the various immunological techniques.
22.	18BBTC09	Microbial Biotechnology	1. Understand the importance of industrially important microbes 2. Acquire knowledge of food microbiology, packaging and fermentation industry . 3. Isolate and screen industrially important microbes. 4. Learn how beverages are made using

			biotechnological approaches. 5. Appreciate the economic importance of biotechnology.
23.	18BBTC10	Practicals II – Microbial Techniques	1. Sterilization procedures 2. Isolating microorganisms from various sources and analyzing their morphology. 3. Microscopy 4. Analysis of bacterial contamination of water 5. Biochemical analysis and fermentation techniques
24.	18BBCI06	**DSE – IV** Mathematics for Biological Sciences (Mathematics)	1. Demonstrate the various types of sets, functions and relations. 2. Find Eigen values and Eigen vectors of a given matrix. 3. Find solutions for algebraic, transcendental equations. 4. Apply differential equation techniques in scientific field. 5. Calculate various measures of central tendency required to analyze research project.
25.	18BBCC11	Clinical Biochemistry	1. Understand the biochemical basis of various diseases. 2. Learn the appropriate tests to assess organ function. 3. Correlate biochemical findings with disease onset and progression. 4. Appreciate the importance of biochemical tests in clinical practice.
26.	18BBCC12	Molecular Biology	1. Understand the concept of gene, genome, and genome organization. 2. Appreciate the intricate molecular mechanisms of the various steps in replication, transcription and translation. 3. Distinguish the processing of RNA and proteins after synthesis. 4. Gain an insight into how gene expression is regulated. 5. Understand the mechanism of DNA damage, repair and recombination.
27.	18BBCC13	Practicals III – Clinical Biochemistry	1. Collecting and preserving biological samples. 2. Separation of serum and plasma for analysis. 3. Analyses of urine and blood for various diseases. 4. Interpreting biochemical data and correlating with clinical data.
28.	18BBTC11	Plant Biotechnology	1. Interpret the concept of gene families and its role in plant breeding 2. Explain the steps involved in photosynthesis and its regulation.Integrate genetic and physical maps of plants to create genome viewer toolsCriticise the advantages and disadvantages of genetically modified plants Devise new methods for biotransformation of plants to produce useful

			metabolites
29.	18BBTC12	rDNA technology and Nanobiotechnology	1. Understand the basic steps in a cloning experiment. 2. Acquire knowledge about how to isolate a DNA segment, clone it into a suitable vector, introduce into a host and identify the recombinant from nonrecombinants. 3. Know the theoretical basis for selection, screening, construction of libraries and expression of genes. 4. Learn the principles of various genetic engineering techniques as well as their applications. 5. Acquire a fundamental understanding of the basic principles of nanobiotechnology
30.	18BBTC13	Practicals III – Methods in Molecular Biology and Plant Tissue Culture	1. Illustrate various experiments to observe the stages of cell division 2. Examine the isolated genetic material from various sources 3. Compare the functions of restriction enzymes and analyse the restricted fragments 4. Discuss how the genes are cloned and selected 5. Distinguish the importance of various techniques involved in plant tissue culture
31.	18BBTC14	Antioxidants in Health and Diseases- **Self-study Course**	1. Understand the different types of free radicals 2. Explain oxidative stress associated diseases and disorders 3. Interpret the role of antioxidants in combating diseases 4. Understand the importance and types of antioxidant
32.	18BBCC15	Molecular Physiology	1. Understand the membrane architecture, different models and various transport systems. 2. explain the organization of nerve cells and neurotransmitters 3. Understand the role of molecular motors, types of muscles and muscle proteins. 4. Explore the hormonal system and how it regulates the activities of organs by signal molecules 5. Understand the concepts of sensory organs.
33.	18BBCC16	Nutritional Biochemistry	1. Assess the nutritional status of community in order to determine the type magnitude and distribution of malnutrition. 2. Describe the biochemical and physiological functions of the nutrients and their integrated role. 3. Evaluate the therapeutic role of key nutrients in maintaining health.
34.	18BBCC17	Practicals IV – Clinical Biochemistry and Food analysis	1. Importance of clinical enzymology. 2. Know more about various tests associated with different organs and tissues 3. Apply their clinical knowledge to investigations in human diseases. 4. Apply their knowledge gained to understand more about calculi

			and its components
35.	18BBTC16	Computational Biology	1. Understand bioinformatics and its applications in pharmaceutical industry. 2. Familiar with biological databases, data storage and querying. 3. Understand algorithms and applying tools in sequence analysis. 4. Apply bioinformatics tools and interpret results
36.	18BBTC17	Animal Cell Culture and Animal Biotechnology	1. Describe the requirements to initiate cell culture facility 2. Compare and contrast different methods of embryo transfer 3. Conceive suitable methods for organ culture and tissue engineering 4. Devise the methods for improved development of therapeutic proteins 5. Apply her expertise for large scale production of metabolites
37.	18BBCV01	Value Added Course	1. Understand about herbal medicines. 2. Explain techniques involved in purification of herbs. 3. Gain knowledge on the home made herbal recipes and herbal supplements. 4. Prepare herbal cosmetics economically. 5. Develop herbal garden at home
Discipline specific elective			
38.	18BPAI02 (For B.Sc. Physician Assistant)	Clinical Biochemistry	1. Familiarize with collection of biological samples and preservation. 2. Clinical significance of metabolic disorder of carbohydrate, protein and lipid. 3. Know the importance of clinical enzymology
39.	18BFNI03/ 18BCHI03 (For B.Sc. FSN and B.Sc. Chemistry)	Chemistry and Metabolism of Biomolecules - Theory	1. Understand the structure and functions of biomolecules in a cell. 2. Relate the properties of biomolecules and their significant role in living systems. 3. Understand the fate of dietary constituents after digestion and absorption. 4. Relate the role distinct metabolic pathways used by cells to harvest the energy.

M.Sc Biochemistry & Biotechnology			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	20MBCC01	Biophysical Methodology	1. Obtain basic knowledge about the working principle, instrumentation and applications of Chromatography, electrophoresis and centrifugation techniques. 2. Analyse the microscopic and radioisotope techniques for their research work.

			3. Explore to understand the various spectroscopic techniques for studying the molecular structure 4. Describe the principle, methodology and applications of emission, massand Raman spectroscopy 5. Integrate the practical aspects of nanotechnology and their applications
2.	20MBCC02	Cell Biology and Microbial Biochemistry	1. Differentiate between prokaryotic and eukaryotic cell organization and its cellular components. 2. Comprehend the role of different cellular components involved in membrane structure,transport, events in a cell's life cycle, cell division and cell death. 3. Understand the microbial diversity. 4. Recognize the bacterial growth and metabolism. 5. Establish the role of microbial world in genetic recombination.
3.	20MBCC03	Intermediary Metabolism and Regulation	1. Gain basic knowledge about the various aspects of carbohydrate metabolism and their regulatory mechanism 2. Describe the biosynthetic and oxidative process of lipid metabolism and its regulation 3. Recognise the metabolism of proteins and metabolic profile of various tissues. 4. Correlate the metabolism of amino acids and their specialized products 5. Integrate the biosynthesis and degradative pathways of nucleic acids and their disorders
4.	20MBCC04	Pharmaceutical and Hormonal Biochemistry	1. Understand the ADME properties of drugs. 2. Obtain basic knowledge about mechanism of action of drugs in the cellular and molecular level. 3. Understand the basic concepts of action of hormones. 4. Will learn the chemistry, synthesis and biochemical actions of group I and group II hormones 5. Interpret and integrate normal and adverse effects of hormones in signaling
5.	20MBCC05	Practicals I – Analytical Biochemistry	1. Understand the basic concepts and principles of biochemical techniques namely Spectrophotometry, Fluorimetry, Chromatography and Centrifugation 2. Analyse biochemical compounds such as Carotenoids, Vitamins, Alkaloids and Flavonoids 3. Identify the compounds by various biochemical techniques and interpret the results 4. Apply the laboratory skills and concepts in carrying

			out experiments using sophisticated instruments
6.	20MBCC06	Practicals II – Microbial Techniques	1. Understand the concept of basic microbiology-Sterilization techniques 2. Knowabout the isolation of microorganisms from various sources 3. Discuss the staining techniques to study the morphology of microorganisms 4. Describethe antibiotic activity 5. Inferthe importance of various biochemical test
7.	20MBCC07	Bioinformatics	1. Explain the contents and layout of the important biological databases and to search and retrieve sequence and structural data using text-based and sequence based search tools. 2. Apply bioinformatics tools for sequence alignment and to find the evolutionary relationships. 3. Explain the theory behind the gene-finding tools, different types of genomics and proteomics and other major applications. 4. Understand the steps involved in the analysis of structures of biomolecules, and predicting their secondary and tertiary structures with various bioinformatics tools. 5. Develop a protein model/design a drug and predict its structure and function with various tools.
8.	20MBCC08	Genetics and Molecular Biology	1. Apply the knowledge of Mendel's law. 2. Understand diploid and haploid life stages, sexual reproduction and human genetics. 3. Predict changes in population and distinguish genetic polymorphism and know the legal issues in genetics, professional ethics and behavior. 4. Explain the organization of chromosomes anddescribe the various steps involved in the process of replication, transcription and translation with illustrations. 5. Explain the DNA repair mechanisms and expression of genes using transposable elements
9.	20MBCC09	Diagnostic Biochemistry	1. Obtain basic knowledge about specimen collections, pathological variations of water, electrolytes 2. Understand the, patterns of inherited disorders and disorders of hemoglobin metabolism 3. Lorrelate the tests used for renal and gastric functions and their interpretations 4. Impart the diagnostic tests for liver function and lipoprotein metabolic disorders

			5. Evaluate the alterations in blood glucose regulation and enzymes of clinical importance
10.	20MBCC10	Nutritional Biochemistry	1. Assess the nutritional status of community in order to determine the type magnitude and distribution of malnutrition. 2. Describe the biochemical and physiological functions of the major nutrients and their integrated role. 3. Evaluate the functions of minerals and water balance 4. Acquire knowledge about the importance of balanced diet and diet therapy 5. Diagnose the food intoxicants.
11.	20MBCC11	Practicals III – Bioinformatics, Clinical Biochemistry and Food Analysis	1. Explain types of data available from the most common sequence and structure databases. 2. Use different database search tools. 3. Analyse the different tools available for various sequence and structure analysis. 4. Interpret the results to diagnose the abnormal functions of organs. 5. Understand the antinutrient factors and its implication on other nutrients in food
12.	20MBCC12	Practicals – IV Molecular Biology	1. Compare the various methods of isolating nucleic acids and proteins from different tissues. 2. Predict suitable methods for isolation, purification and characterization of transformants. 3. Predict suitable methods for isolation, purification and characterization of plasmids. 4. Understand the basics of gene amplification using PCR. 5. Detect DNA sequences by blotting techniques
13.	20MBCI01	Natural Antioxidants in Human Health and Diseases	1. Learn about free radicals, their types and sources 2. Understand the pathophysiology of oxidative stress associated diseases 3. Attain knowledge about different criteria of antioxidants classification and their role in combating free radical-induced diseases 4. Identify different phytoconstituents with antioxidant activity 5. Explore strategies to neutralise free radicals and combat oxidative stress
14.	20MBCC14	Immunology and Immunotechnology	1. Understand the characteristic features and interplay of the various components of the immune system 2. Identify and compare the mechanisms involved in different types of immunities and immune responses in health and infections 3. Analyze the principles underlying hypersensitive and autoimmune reactions 4. Interpret the role of genetics in antibody synthesis

			and in transplantation 5. Apply the knowledge gained in immunotechniques for better interpretation of results
15.	20MBCC15	Physiology, Biochemistry and Biotechnology of Plants	1. Explain the functioning of plants as primary producers 2. Identifythe changes taking place during plant development at a molecular level 3. Relate the importance of genome mapping and genome projectswith IPR 4. Listthe potential areas of research in plant sciences **5.** Justify the importance of genetically modified organisms as thefuture for food security
16.	20MBCC16	Genetic Engineering	1. Understand suitable methods for isolation and purification of DNA from Bacteria, Plants, Plasmid and Phage for cloning purposes 2. Explain the restriction enzymes, construction of vectors, principle and the mechanism of various gene transfer methods 3. Use the knowledge gained about hybridization techniques, methods of sequencing, gene amplification, polymorphism studies 4. Explore the production of rDNA products in the field of agriculture,medicine, industry and environment.
17.	20MBCC20	Advanced Enzymology	1. Acquire the knowledge of structure and organization of protein. 2. Identify the different classes of enzymes, the methods used for purification of enzymes and describe enzyme kinetics for bisubstrate and multisubstrate reactions. 3. Do research in a contemporary action of enzyme and enzymeinhibition. 4. Explain the enzyme regulation and multienzyme complex. 5. Explore the applications of enzymes in clinical and various industrial sectors.
18.	20MBCC18	Practicals V- Enzymology and Immunology	1. Apply the various principles of immunology and enzymology in laboratory diagnosis. 2. Conceive the relationship of immunology in health and disease. 3. Explain the methods that form the basis of enzyme characterization. 4. Compare the various types of immunotechniques. 5. Outline the principles involved in protein purification
19.	20MBCC19	Practicals - VI Tissue Culture	1. Have hands on experience of in vitro culture of plant and animal cells. 2. Demonstrate the differences between culture of animal and plant cells *in vitro*. 3. Justify and quantify the expression of secondary

			metabolites in plants.
20.	20MBCC20	Environmental Biochemistry (Self Study)	1. Understand the concepts of environment and ecosystem. 2. Appreciate the importance of geochemical cycles in the working of the ecosystem. 3. Comprehend the implications of various types of pollution on the environment. 4. Realize the impact of environmental pollution on living organisms. 5. Infer the various types of disasters and their management.
21.	20MBCM01	Home Remedies for Common Ailments	1. Understand about herbal medicines. 2. Explain techniques involved in purification of herbs. 3. Gain knowledge on the home made herbal recipes and herbal supplements. 4. They can prepare herbal cosmetics economically. 5. Develop herbal garden at home.
22.	20MBCC22	Neurochemistry	1. Understand the features and organization of the various components of the nervous system and mechanisms of neurotransmission 2. Identify the role of neurotransmitters and neuropeptides in the nervous system 3. Examine the role of major brain lipids 4. Compare the differences in the characteristics features and transport of substances across the BBB and B-CSF barrier 5. Apply the principles of neuroscience in health and neurological disorders
23.	20MBCC23	Biostatistics and Research Methodology (Open Book Test)	1. Analyse biological data using the best suited statistical tool and draw inferences from the results 2. Ascertain whether a given set of biological data are statistically significant or not by applying the appropriate hypothesis testing method 3. Devise the research methodology for their dissertation and design a project based on theresearch problem presented to them by their supervisor 4. Compile their results from the dissertation work and integrate the interpretation in relation to the published literature in their area of research **5.** Conceive the best presentation mode for their results in the form of a thesis and journal article(s)
24.	20MBTC01	Biochemical Concepts for Biotechnology	1. gain the basic knowledge on bioenergetics and thermodynamics 2. understand the basic concepts of metabolism of macromolecules 3. attain knowledge on the structure and functions of biomolecules 4. Study the interrelationship between carbohydrate, proteins and lipid metabolism

			5. Gain knowledge of the disorders associated with protein and nucleic acid metabolism
25.	20MBTC02	Cell Biology and Microbiology	1. Understand the components and structural organization of the cells and their organelles and deduce how the structural organization is ideally designed to suit the biological function of each organelle / cell 2. Appreciate the different types of transport in to and out of cells, specialized molecules and mechanisms involved in cell transport 3. Understand the stages of cell cycle and different forms of cell death 4. Understand the microbial diversity and their growth conditions 5. Relate the pathogenic microbes to the disease conditions that they cause and deduce the type of treatment strategies that can be adopted to treat the infectious diseases
26.	20MBTC03	Molecular Biology	1. Illustrate the steps involved in genome organization and prove the nature of genetic material with experimental evidence. 2. Explain the mechanism of DNA replication and repair. 3. Enumerate the steps involved in transcription and methods involved in RNA processing 4. Narrate the translational machinery involved in protein synthesis with reference to inhibitors and post translational modification. 5. Apply the knowledge involved in regulation of the gene expression in prokaryotes and eukaryotes.
27.	20MBTC04	Biophysical Techniques	1. Obtain basic knowledge about the working principle, instrumentation and applications of microscopic and centrifugation techniques. 2. Choose the suitable chromatographic and electrophoretic techniques for their research work. 3. Explore to understand the various spectroscopic techniques for studying the molecular structure 4. Describe the principle, methodology and applications of mass spectroscopy and sequence analysis 5. Integrate the practical aspects of radioactive and scattering techniques.
28.	20MBTC05	Practicals I – Analytical Techniques in Biotechnology	1. Understand of the range of light absorption principles and their uses inBiotechnology 2. Understand the various chromatographic andelectrophoretic methods for the separation of biomolecules 3. Able to demonstrate the handling of higher end analytical instruments

			4. Analyzedifferent methods of isolation and extraction of cell components 5. Develop problem-solving skills required for working in biotechnology industry / entrepreneurial ventures
29.	20MBTC06	Practicals II – Cell Biology and Microbial Techniques	1. Attain skills of basic techniques such as cell counting, measuring cell size and chromosomal length 2. Process samples for microscopic analysis 3. Achieve knowledge about different sterilization procedures, media preparation for microbes 4. Develop knowledge and technical skills in microbial techniques such as different plating methods, staining procedures and isolation of pure microbial colonies from different sources 5. Identify the microorganism by interpreting the results of biochemical tests
30.	20MBTC07	Genetics	1. Apply the knowledge of Mendel's law and pedigree analysis 2. Understand the genetic basis of variation in chromosome structure and location of genes on a chromosome 3. Apply concept of gene mapping, genetic recombination and identify molecular markers 4. understand the difference between DNA damage and gene mutation and its applications and methods to identify them 5. Know the evolutionary significance of transposons and population genetics
31.	20MBTC08	Animal Biotechnology	1. Apply the knowledge of employing various cell culture media and techniques in culturing animal cells 2. Employ the concepts of genetic manipulation of animal cells to produce biologicals 3. Appreciate the benefits of therapeutic cloning to treat human diseases 4. Explore the benefits of stem cell therapy in health 5. Adopt suitable integrated pest management strategies to significantly reduce the use of pesticides
32.	20MBTC09	Bioinformatics	1. Explain the contents and layout of the important biological databases and to search and retrieve sequence and structural data using text-based and sequence based search tools. 2. Apply bioinformatics tools for sequence alignment

			and to find the evolutionary relationships. 3. Explain the theory behind the gene-finding tools, different types of genomics and proteomics and other major applications. 4. Understand the steps involved in the analysis of structures of biomolecules, and predicting their secondary and tertiary structures with various bioinformatics tools. 5. Develop a protein model/design a drug and predict its structure and function with various tools.
33.	20MBTC10	rDNA technology	1. Demonstrate the application of various tools and techniques used in developing a recombinant molecule. 2. Explain the process of genecloning and relate the importance of genetically modified organisms for human welfare 3. Justify the importance of genome projects and the potential application of recombinant techniques 4. Critically analyze the various issues related to gene manipulation 5. Choose a problem and design a solution and also the methodology to protect their work
34.	20MBTC11	Practicals III – Animal Biotechnology and Bioinformatics	1. Use and comfortably operate in sterile environment of animal tissue culturelaboratory 2. Apply their theoretical knowledge to initiate primary cultures and maintain established cell lines 3. Analyse the methods of biological sequences using tools of pairwise and multiple alignment and construct and interpret phylogenetic trees 4. Analyse structures of biomolecules, and predict their secondary and tertiary structures 5. Interpret molecular interactions and deduce the strength of the interactions
35.	20MBTC12	Practicals IV – rDNA Technology	1. Compare the various methods for isolating the nucleic acids and proteins from different tissues 2. Predict suitable methods for isolation and purification of plasmid DNA for various applications 3. Synthesize suitable clones for cloning experiments 4. Understand the basics of gene amplification using PCR and RAPD analysis 5. Detect specific DNA sequences by blotting techniques and hence plan hybridization experiments
36.	20MBTC14	Immunology and Immunotechnology	1. Understand the characteristic features and interplay of the various components of the immune system 2. Identify and compare the mechanisms involved in different types of immunities and immune responses in health and infections 3. Analyze the principles underlying hypersensitive

			and autoimmune reactions 4. Interpret the role of genetics in antibody synthesis and in transplantation 5. Apply the knowledge gained in immunotechniquesfor the production of antibodies and vaccines and for the better interpretation of results during disease diagnosis
37.	20MBTC15	Plant Biotechnology	1. Paraphrase on plant genome organization of gene families, RNA editing, mechanism of photosynthesis 2. Explain the concept of nitrogen fixation, biosynthesis and mechanism of action of plant hormones, flower development and plant stress response 3. Use the molecular markers and marker assisted selection methodology for mapping of genes 4. Apply the strategies for gene cloning, transformation vectors, direct transformation in plants and its application 5. Apply the *invitro* culture techniques of plants including embryogenesis, somatic embryogenesis, biotransformation and production of secondary metabolites
38.	20MBTC16	Enzymes and Bioprocess Technology	1. Apply the concepts of nomenclature of new enzymes and kinetics of enzymes catalysis 2. Analyze the mechanisms of enzyme catalysis based on various factors 3. Describe the various methods and mechanisms for enzyme purification 4. Elaborate the steps involved in large scale production 5. Compare the various processes involved in downstream processing and to know the significance of purified products
39.	20MBTC20	Pharmaceutical Biotechnology	1. Understand the different criteria of classification for pharmacological compounds such as nature, sources, mode of administration and to comprehend their mechanism of action at both cellular and molecular level. 2. Understand the different stages of development and the interdisciplinary approaches in drug discovery and development. 3. Evaluate the different strategies of drug testing that includes pharmacokinetics, dynamics and toxicological studies. 4. Interpret and integrate various biotechnological approaches to validate drug purity and to study the influence of various factors on drug safety and

			efficacy. 5. Understand drug safety regulations and the significance of Intellectual property rights (IPR) and patenting of drug products.
40.	20MBTC18	Practicals V – Immunotechnology and Plant Biotechnology	1. Develop approaches to create and use immunological mixtures as experimental tools 2. Design new protocols using immunological techniques as diagnostic tools 3. Conceive ideas to develop new kits based on ELISA techniques to identify new diseases 4. Devise methods for protoplast fusion to produce new species of plants 5. Prepare various combinations of plant tissue culture media for culturing various explants
41.	20MBTC19	Practicals VI – Enzymes and Bioprocess Technology	1. Apply the fermentation process learnt for the production of antibiotics using bioreactor for large scale production. 2. Assess the nature of metabolites extracted from the microbes 3. Deduce the most important metabolites/ enzymes that could be obtained from microbes in a purified form 4. Devise a technique for further improvement of the metabolites of interest 5. Acquire the laboratory skills necessary to serve in pharmaceutical and other industries
42.	20MBTC20	Environmental Biotechnology (Self Study)	1. Understand the basic concepts of ecosystem and types of waste management 2. Appreciate the role of biomass in food industry 3. Discuss the importance of biofuels 4. Describe about the biodegradation of xenobiotics 5. Infer the different types of the various disasters and their management
43.	20MBTC22	Food Biotechnology and Nanobiotechnology	1. Highlight the various techniques of nanomaterial preparations 2. Compare and contrast the different techniques to characterize the nanoparticles 3. Explain and describe the applications of nanoparticles in diagnostics and other applications as well as understand the importance of ethical aspects of nano biotechnology 4. Understand the role of biotechnology in the enhanced production and enrichment of various food products 5. Analyze and comprehend the impact of

			biotechnology in food industry
44.	20MBTC23	Biostatistics and Research Methodology (Open Book Test)	1. Analyse biological data using the best suited statistical tool and draw inferences from the results 2. Ascertain whether a given set of biological data are statistically significant or not by applying the appropriate hypothesis testing method 3. Devise the research methodology for their dissertation and design a project based on theresearch problem presented to them by their supervisor 4. Compile their results from the dissertation work and integrate the interpretation in relation to the published literature in their area of research 5. Conceive the best presentation mode for their results in the form of a thesis and journal article(s)
Other courses offered by the department			
45.	20PBTI01	Prospects of Biotechnology	1. Know the role of Biotechnology in healthcare. 2. Understand the applications of Biotechnology in the field of textiles. 3. Recognize the potential applications of biotechnology in food products. 4. Imbibe the biotechnological interventions in producing plant and animal products. 5. Understand how to employ biotechnological processes in combatting environmental complications
46.	20PBTM01	Scientific and Technical Writing	1. Understand presentation styles in different technical writing ways such as thesis and journals 2. Differentiate between the technicalities of presenting their data in the form of a thesis, journal article 3. Understand the intricacies of technical writing for a general audience and developing articles for the layman 4. Discriminate between the technical writing styles for physical sciences, computational sciences and management and social sciences 5. Construct model articles and case studies, project proposals for funding and progress reports of work in various disciplines

M. Sc Bioinformatics			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	20MBIC01	Basic Biology	1. Describe the importance of the basic chemicals of life and their functioning; 2. Explain the integration of metabolic process central to the logical understanding of life;

			3. Relate the concept of energy metabolism; 4. Differentiate the similarities and dissimilarities between prokaryotic and eukaryotic systems; 5. Demonstrate the evolutionary process of life and analyse how to apply bioinformatics for betterment of life.
2.	20MBIC02	Applied Mathematics in Bioinformatics	1. Use the fundamental concepts of matrix algebra; 2. Demonstrate the principles and applications in analytical geometry and vector functions; 3. Apply the numerical concepts in solving the differentiation and integration; 4. Formulate solutions for differential equations using Taylor's, Euler and Rungekutta method; 5. Apply Gauss Jordan, Gauss-Jacobi method and Gauss-Seidel method to find solution for linear equation
3.	20MBIC03	Basics in Computer and C programming	1. Demonstrate the components of computers in data communications and networking; 2. Know the fundamental concepts in C programming language; 3. Choose the loops and decision making statements to solve problems; 4. Apply the concepts of functions to solve problems; 5. Solve problems using pointers and structures
4.	20MBIC04	Biological Databases and Sequence Analysis	1. Explain types of data available from the most common sequence and structure databases; 2. Explain the theories underlying sequence searches and alignment; 3. Demonstrate the different approaches of creating phylogenetic trees and evaluating them; 4. Analyse the nucleotide sequence and structure with various bioinformatics tools; 5. Analyse protein sequence and structure with relevant methods and algorithms
5.	20MBIC05	Practical 1. C programming and Web Programming	1. Choose and execute commands in Linux operating system; 2. Write programs in C and debug; 3. Apply the loops and decision making statements to solve the problems; 4. Explain the concept of functions, pointers and structures in programming; 5. Use gained knowledge in biological data analysis tool development.
6.	20MBIC06	Practical 2. Biological Databases and Sequence Analysis	1. Explain types of data available from the most common sequence and structure databases; 2. Apply different database search tools for searching data; 3. Apply tools for sequence analysis and interpret the data effectively; 4. Apply and understand free online tools for

			phylogenetic analysis; 5. Understand the importance of biomolecules structure and interpret data.
7.	20MBIC07	Perl and Python	1. Develop Perl scripts to solve biological problem and web development 2. Compare and contrast different regular expressions 3. Develop substantial Python scripts 4. Develop regular expressions to solve problems 5. Develop modules using BioPerl and BioPython
8.	20MBIC08	Structural Bioinformatics	1. Explain bonding and their arrangementsin a molecules. 2. Predict the structural conformations of biological macromolecules 3. Define structure-function relationship in proteins and knows their underlying principles. 4. Analyse data to identify how molecular interactions affect structure and function. 5. Explain basic principles of experimental methods for the determination of macromolecule structures and use different types of protein structure prediction tools
9.	20MBIC09	Molecular biology and rDNA technology	1. Interpret the prokaryotic and eukaryotic genomestructure and replication; 2. Explain thetranscription and translation and apply in the analysis of nucleic acid sequences; 3. Outline the method of polymerase chain reaction and apply in the development of gene libraries; 4. Illustrate the method and applications of cloning;. 5. Apply rDNA technology in analyzing genes
10.	20MBIC10	OMICs Technologies	1. Outline genomics and genome database and genome browsers; 2. Plan experiments with the knowledge gained; 3. Illustrate key technologies involved in metabolomics; 4. Explain key technologies in proteomics; 5. Apply omics data in understanding and the management of disease.
11.	20MBIC11	Practical 3. Perl and Python	1. Develop Perl scripts to solve biological problem and web development 2. Compare and contrast different regular expressions 3. Develop substantial Python scripts 4. Develop regular expressions to solve problems 5. Develop modules using BioPerl and BioPython
12.	20MBIC12	Practical 4. Omics (Genomics and Proteomics)	1. Apply genomics and genome database and genome browsers; 2. Apply the techniques related with genomics, proteomics, and transcriptomic; 3. Estimate DNA, RNA and proteins from the sample; 4. Use isolation techniques to design experiments; 5. Apply omics data in understanding and the

			management of disease
13.	20MBIC14	Database Management System	1. Outline the database management system; 2. Plan and design relational database by understanding functional dependencies; 3. Illustrate the basics of SQL and constructs queries using SQL 4. Design a relational database schema using SQL for a given problem-domain 5. Apply the concept of concurrency control of database processing
14.	20MBIC15	Object Oriented Languages	1. Discuss the basic concepts in OOPs; 2. Apply classes in writing program; 3. Apply Inheritance and file handling in OOPs; 4. Know how to apply Java and Biojava and sequence analysis; 5. Apply Java Applets and GUI
15.	20MBIC16	Molecular modeling, Simulation and Drug Designing	1. Identify the complexity of different quantum mechanical methods 2. Illustrate the basic concept of molecular mechanics 3. Infer the outcomes of molecular dynamics simulation 4. Relate the molecular structure and biological activity 5. Solve their own research problems by applying the concept computational methods of drug discovery
16.	20MBIC17	Next generation sequencing and data analysis	1. Illustrate the principle and application of NGS; 2. Compare and contrast the different types of NGS platform; 3. Acquire the knowledge of interpreting the NGS data; 4. Apply the R program for NGS data analysis; 5. Apply bioinformatics knowledge in health care industries.
17.	20MBIC18	Practical 5. Database Management System, Molecular Modeling and Drug Discovery	1. Create database and querying and creating reports; 2. Apply the basic concept in drug discovery; 3. Apply HTVS in drug discovery process; 4. Solve their own research problems by applying the concept computational methods of drug discovery; 5. Plan placement in pharmaceutical and biotechcompanies
18.	20MBIC19	Practical 6. Object Oriented Languages	1. Apply the basic concepts of C++ in data analysis; 2. Apply the basic concepts in Java in data analysis 3. Write program using C++, Java and Bio Java in data handling 4. Able to install R 5. Apply R language in Dig data analysis
19.	20MBIC20	Environmental Science and Disaster management (Self Study)	1. Understand the core concepts of environmental studies and the significance of conservation of ecosystem 2. Comprehend the concepts of different ecosystems and the impact of pollution on environment and their

			management 3. Develop knowledge about biodiversity and its conservation 4. Learn how to manage natural disasters 5. Study about environment protection policies and the human exploitation of natural resources
20.	20MBIC22	Systems Biology	1. Understand basic concepts and measurement techniques in system analysis 2. Understand the mathematical modeling of biochemical reactions 3. Understand the reconstruction of pathways and biological networks 4. Apply simulation techniques and perform basic data processing and analysis 5. Implement the techniques learnt in the analysis of diseases
21.	20MBIC23	Research methodology and Statistics (Open Book Test)	1. Apply the methods of sampling, diagrammatic and graphical representation of data for analyzing the data 2. Use the measure of central tendency, deviation, correlation and regression for analysing and to inferring data 3. Illustrate on probability and theoretical distribution of data and also outline the hypothesis testing 4. Prepare the objectives and types of research. Apply inclusion, exclusion criteria and blinded trials with respect to clinical trial. 5. Prepare the components of thesis writing. Distinguish between thesis components and journal components. Outline the ethical and copyright issues in plagiarism
22.	20MBII01	Bioinformatics in Health	1. Analyse health information and arrive conclusion 2. Store and archive health data for further analysis 3. Apply the knowledge in retrieving and analyzing the data 4. Demonstrate drug discovery process 5. Apply the gained knowledge in health management

M.Phil/Ph.DBiochemistry			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPBC01/ 19PHBC01	Research Techniques for Biochemistry	1. Comprehend the basics of biochemical, biotechnological, biophysical and immunological techniques for the analysis of biomolecules. 2. Gain knowledge on cell and tissue culture of plants and animals and recombinant DNA technology. 3. To address the biological research questions using appropriate computational tools.

			4. Ability to evaluate the suitability of statistical tools and techniques appropriate to their research needs and create sound research methodology to conduct original research in biosciences
2.	19MPBC02/ 19PHBC02	Advanced Biochemistry	**1.** Explain the process of thermodynamics **2.** Know the concepts of immunology, genetics and genetic engineering. 3. Able to comprehend the ethical issues associated with biological research and intellectual property rights

M.Phil /Ph.D Biotechnology			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPBT01/ 19PHBT01	Research techniques for biotechnology	1. Comprehend the basics of biochemical, biotechnological, biophysical and immunological techniques for the analysis of biomolecules. 2. Gain knowledge on cell and tissue culture of plants and animals and recombinant DNA technology. 3. To address the biological research questions using appropriate computational tools. 4. Ability to evaluate the suitability of statistical tools and techniques appropriate to their research needs and create sound research methodology to conduct original research in biosciences
2.	19MPBT02/ 19PHBT02	Advanced Biotechnology	1. Acquire theoretical knowledge on cell biology, molecular biology, population genetics, immunology, enzymology and plant biochemistry 2. Acquire in depth knowledge on gene transfer methods and advanced immunology 3. Identify appropriate tools and techniques to conduct original research in various fields of biotechnology such as microbial genetics, bioinformatics and enzyme engineering 4. Understand the ethical issues in animal biotechnology and intellectual property rights include patents, copyrights, marks and trade secrets

M.Phil Bioinformatics			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	19MPBI01	Research Methodology for Bioinformatics	1. Design project proposal, implement and report presentation with statistical analysis. 2. Equip the students with bioinformatics techniques to

			analyze biological data
2.	19MPBI02	Advanced Bioinformatics	1. Construct predictive mathematical models of biological systems 2. Able to implement algorithm in data analysis 3. Analyze biological data using various computational tools 4. understand the application of bioinformatics and big-data in drug discovery process 5. Apply the acquired knowledge in health, agriculture and veterinary science.

Department of Physician Assistant

B.Sc			
S. No	**Course Code**	**Title of the Course**	**Course Outcome**
1.	18BPAC01	Anatomy – I	1. Understand the basics of anatomy ,cell,tissue, body fluids,bones and blood. 2. Know the importance of structure and organisation of Muscular System and Arthrology 3. Provide students insight into normal structural anatomy of Cardiovascular System and 4. Anatomy and ventilation process of respiratory system. 5. Aware of structural and functional knowledge of digestive system and genitor urinary Ssstem 6. Understand the anatomical organisation of abdominal wall structure System and Endocrine System.
2.	18BPAC02	Physiology – I	1. Understand the basics of physiology ,cell,tissue, body fluids,bones ,blood and haemoglobin. 2. Know the importance of physiological process of Muscular System and Arthrology . **3.** Provide students insight into normal physiology of Cardiovascular System. 4. Aware of functional anatomy and ventilation process of respiratory system. 5. Understand the physiological process of Gastrointestinal System and Excretory System.
3.	18BPAC03	Principles of Nutrition and Diet Therapy	1. Understand the concept of macro and micronutrients rich sources of foods 2. Knowledge on the mal nutritional symptoms of various nutrients 3. Apply the skills in planning adequate therapeutic diet and dietary modification for health and disease conditions 4. Manage communicable diseases with nutritional and

			therapeutic support 5. Understand the Nutritional requirements and complications of the various age groups
4.	18BPAC04	Infection Control	1. Recognize the importance of the correct application of reprocessing methods for assuring the safety and integrity of patient care equipment. 2. Identify the individual's professional responsibility for maintaining a safe patient care environment. 3. Recognize strategies for effective pre-cleaning, chemical disinfection, and sterilization of instruments and devices 4. Distinguish the various aseptic techniques and appraise the process of reducing risk of infection in clinical area. 5. Justify the Correct use of appropriate barrier to control infection.
5.	18BPAI01	DSE I - Computer Application for Paramedics	1. Identify and analyze computer hardware, software, and network components. 2. Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems. 3. Understand the meaning of the term Internet and its functioning. 4. Communicate effectively with associates in written, oral or schematic form. 5. Know the functioning and types of search engines.
6.	18BPAC05	Anatomy- II	1. Understand the basics of anatomy of special organs in human body. 2. Know the importance of structure and organisation of upper limb and lower limb and arthrology andarthrokinematics. 3. Provide students insight into normal structural anatomy of thorax and organs in it. 4. Aware of structural and functional knowledge of head and neck structures. 5. Understand the anatomical organisation of central nervous system,brain,spinal 6. cord,nerves and peripheral nervous system.
7.	18BPAC06	Physiology –II	1. Know the importance of physiological process of Special Senses. 2. Understand the General endocrinology and disorders of hormones. 3. Provide students insight into normal physiology of male and female reproductive system. 4. Aware of functional anatomy of Lymphatic and Immunological System. 5. Understand the physiological process of Central Nervous System.
8.	18BPAC07	Physiology -III Practical-I	1. Understand and perform the various tests and procedures in hospital and community settings.

9.	18BPAC08	Clinical Psychology	1. Recognize the importance of Psychology. 2. Identify the individual's professional responsibility for maintaining a safe patient care environment. 3. Recognize strategies for effective pre-cleaning, chemical disinfection, and sterilization of instruments and devices 4. Distinguish the various aseptic techniques and appraise the process of reducing risk of infection in clinical area. 5. Justify the Correct use of appropriate barrier to control infection
10.	18BPAI02	Clinical Biochemistry	1. The students will be familiar with collection of biological samples and preservation. 2. The students will know to clinical significance of metabolic disorder of carbohydrate, protein and lipid. 3. The students will know the importance of clinical enzymology
11.	18BPAC09	Pharmacology-I	1. Learn about the terms in pharmacology, Pharmacokinetics and classification of the drugs. 2. Study about the principles of drug actions, adverse drug effects and drug interactions on various drugs 3. Understand the drugs used on autonomic nervous system, Autocoids drugs and NSAID drugs 4. Gain knowledge about Drugs Acting on Cardiovascular System and Dermatology 5. Know the drugs acting on Respiratory and Haematology system
12.	18BPAC10	General Pathology-I	1. Understand the basics of pathology, divisions, basics of cell injury in human body. 2. Understand normal and abnormal fluid balance,circulatory disorders associated with it. 3. Provide students insight into normal growth,growth disturbances and tumor pathology 4. Know the importance of inflammation,types,process of repair and aware of functional knowledge of immune system of body. 5. Understand the classification of infectious disorders and other nutritional disorders
13.	18BPAC11	Gynaecology	1. To acquire knowledge about gynecological infections. 2. To gain thorough knowledge and skills of Pelvic organ examination 3. To understand Reproductive endocrinology. 4. To identify Menopausal issues and its Hormones 5. To recognize appropriate investigations and management modalities for Gynaecological Cancers
14.	18BPAC12	Fundamentals of Health Sciences	1. Identify the health and illness of the patient and understand about health Promotion and prevention and primary Care.

			2. Perform health assessment of each body system, admission and discharge procedure. 3. Communicate effectively with patient, families and team member and maintain effective human relations and evaluate the care for meeting basic,physiological and psychosocial needs of patient 4. Describe the pre and post-operative care of patients and terminally ill patients 5. Learn about the purposes, types and techniques of recording and reporting
15.	18BPAC13	Medicine-I	1. Understand the basics of rheumatological, spine diseases, pathology and treatment 2. Provide students insight into integumentary diseases and its treatment. 3. Know the importance of brain and neurological diseases,pathology and management. 4. Assess central nervous system diseases and oncology medicine and treatment. 5. Understand the endocrine gland diseases, pathogenesis and its management
16.	18BPACI03	Microbiology	1. Students will be able to apply the methods of disinfection and sterilization to control and prevent hospital and community acquired infections. 2. Students will be able to differentiate the various infections caused by bacteria 3. Students will be able to compare the different mycological infections 4. Students will be able to analyse the harmful effects of protozoa and viruses based on its structure 5. Students will be able to discuss the importance of immunity and vaccines in diseases
17.	18BPAC14	Pharmacology-II	1. Acquire Knowledge about the Gastrointestinal and kidney related drugs. 2. Describe drugs used for hormonal disorders and supplementation, contraception and medical termination of pregnancy 3. Classify the Chemotherapy drugs for Microbial Diseases &Neoplastic diseases. 4. Prescribe the drugs along with doctors for various specific infections and infestations of the diseases. 5. Recognize the types of anaesthesia and provide pre and post-operative care to the surgical conditions and provide treatment modalities and therapies used in mental disorders
18.	18BPAC15	General Pathology - II	1. Understand the basics of cardio respiratory diseases and its pathology. 2. Know the importance ofurinary tract and gastrointestinal tract diseases and its pathology. 3. Provide students insight into hematopathology,liver

			and biliary tract diseases. 4. Aware of female and male reproductive diseases and joint pathologies. **5.** Understand the classification of endocrine gland disorders and stroke pathogenesis and its clinical features.
19.	18BPAC16	Medicine -II	1. Understand the basics of cardio vascular diseases,pathology and treatment. 2. Know the importance of respiratory diseases ,pathology and management. 3. Provide students insight into kidney and genitourinary tract diseases and its treatment. 4. Awareofhematopathologynsfusion and blood pathologies. 5. Understand the gastrointestinal oragan diseases, pathogenesis and its management
20.	18BPAC17	Obstetrics	1. To acquire knowledge of anatomy, physiology related to reproductive system 2. To acquire thorough knowledge of physiology of normal pregnancy and its 3. Diagnosis and management. 4. To understand normal puerperium and able to diagnose its abnormalties. 5. To identify and assist abnormal pregnancy 6. To recognize appropriate investigations and management modalities for abnormal labour
21.	18BPAC18	Community Medicine	1. Describe health system and health care services in India. 2. Identify major health problems, national health programmesandspecialized community 3. healthservices. 4. Demonstrate skills in rendering effective care in all aspects of community health settings. 5. Understand theEpidemiology and Epidemiological research methods and its application. 6. State the importance of Epidemiology of communicable and non communicablediseasesand its control.
22.	18BPAI04	Allied-IV Bio medical Instrumentation and Scientific Measurements	1. Gain knowledge on various recording techniques and diagnostic applications. 2. Understand the clinical application of therapeutic devices in cardiac care. 3. Learn about the various types of blood flow measures. 4. Study about the Clinical Equipments and Scientific Measurements. 5. Be familiar with related regulations and exposure standards
23.	18BPAC20	Pediatrics	1. Gain Knowledge on Clinical assessment, Growth and Development, Immunization and Nutritional

			needs of the children. 2. Understand the disease condition and provide the appropriate treatment of common childhood illness 3. Identify the Congenital anomalies and recognize the clinical features, investigations, medical and surgical management of common systemic disease of the children. 4. Provide care to normal & high risk neonates ,perform neonatal resuscitation, recognize and manage common neonatal problems 5. Identify Paediatric Emergencies and carry out crisis intervention
24.	18BPAC21	General Surgery	1. On the successful completion of the course, students will be able to 2. Understand the basics of anatomy and physiology of major body systems 3. Know the importance of documentation and assessment knowledge in pre-operative, intra and post-operative care. 4. Aware of various surgical procedures and post - operative rehabilitative management of major body system. 5. Understand the basic surgical sepsis or infection control and preventive measurements.
25.	18BPAC22	Medicine-III Practical-III	1. Understand and perform various test and procedures in hospital as well as in community settings
26.	18BPAC23	Principles of Emergency Medicine and Disaster Management	1. Understand the basic principles of Emergency medicine and Management of various Emergency conditions. 2. Know the management of Central Nervous System, Renal and Hematological emergencies. 3. Provide students insight into Emergency airway management 4. Aware of basics of Disaster. 5. Understand the management of Disaster in various settings.
27.	18BPAC24	Geriatrics	1. Understand the basics of Geriatrics, Physical and physiological changes, Policies and 2. Programmes of elderly. 3. Know the importance of history taking, doing investigations and identify the risk 4. factors related to old age. 5. Provide students insight into systematic disorders in old aging. 6. Aware of disorders of sensory and digestive system. 7. Understand the various systemic Changes in Elderly
28.	18BPAC25	Bio statistics and Research	1. Identify and state the research problem and objectives

			2. Describe the research approaches and designs 3. Explain the sampling process and Describe the methods of data collection 4. Explain the use of statistics, scales of measurement and graphical presentation of data 5. Communicate and utilize the research findings.
29.	18BPAC26	Hospital Management (Self study course)	1. Aware ofPrinciples and Practices of Management. 2. Know the various categories of Organizational Behaviour in Hospital. **3.** Provide students insight into Hospital Planning and admission and discharge. 4. Understand the Health Care & Administration of Clinical & Non-clinical Services. 5. Identify the Hospital Hazards and dispose under Biomedical Waste Management.
30.	18BPAC30	Cardiology	1. Understand the basics of anatomy and physiology of cardiovascular system, body fluids ,blood. 2. Know the importance of assessment and diagnostic procedures, invasive techniques in cardiovascular system. 3. Improve knowledge in cardiovascular diseases and peripheral vascular diseases. **4.** Provide students insight into drug and intensive care management of Cardiovascular System. 5. Aware of various surgical procedures and post operative rehabilitative management of cardiovascular system, cardiac rehabilitation and life style modifications.
31.	18BPAC31	Neurology	**1.** Understand the review of Anatomy and physiology of nervous system. 2. Know the importance of Assessment , diagnostic measures and Drugs used in neurological and neurosurgical disorders 3. Provide students insight into management of Traumatic conditions ,Neuro emergencies and Cerebro vascular disorders. 4. Aware of the management of Degenerating,Neuro infections, Paroxysmal disorders and Developmental disorders. 5. Understand the Management of Neuro muscular disorders ,Neoplasms andNeuro Rehabilitation.
32.	18BPAC32	Nephrology	1. Gain knowledge about normal structure and functions of kidney 2. Help the students to evaluate the patient with kidney disease 3. Identify the Disorders Of Kidney Structure And Function 4. Recognize strategies for Dialysis And Kidney Transplantation 5. Distinguish the The Consequences of Advanced

			Kidney Disease
33.	18BPAC33	Respiratory	1. Understand the basics of anatomy and physiology of respiratory system, thoracic cavity, body fluids, blood. 2. Know the importance of assessment and diagnostic procedures, invasive techniques in respiratory system. 3. Understand the respiratory diseases and chest wall diseases. **4.** Provide students insight into drug and intensive care management of respiratory system. 5. Aware of various surgical procedures and post operative rehabilitative management of respiratory system.

School of Arts and Social Sciences

Department of Economics

B. A. Economics			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BECC01	Micro Economics – I	1. Have knowledge on the basic concepts in micro economics. 2. Understand the behaviour of consumers and producers in market conditions. 3. Able to examine the practical relevance of economic theories. 4. Have ability to analyse current events from an economic perspective. 5. Develop knowledge that provide a foundation for pursuing lifelong learning.
2.	18BECC02	Macro Economics – I	1. Know the functioning and linkages of different sectors and their contribution to national income. 2. Understand the theories in Macro Economics from Classical and Keynesian perspective. 3. Evaluate the relevance of classical and Keynesian theories to Indian conditions 4. Comprehend the various determinants of macroeconomic variables. 5. Apply the various principles of macroeconomics for setting goals and policies.
3.	18BECC03	Mathematics for Economists	1. Be familiar with the basic concepts in set theory and matrix algebra 2. Be conversant with the technique of matrix algebra. 3. Know basic rules of differentiation and integration 4. Comprehend the role of matrix in Economics 5. Understand the use of derivatives and integration in Economics
4.	18BECC04	Micro Economics – II	**1.** Know the concepts of market and time element. **2.** Understand the working of different market structure. **3.** Identify the fundamental concept in factor pricing. **4.** Comprehend the theories of factor pricing **5.** Assess the relevance of market and factor pricing models in the current scenario

5.	18BECC05	Macro Economics – II	1. Develop knowledge about the concepts in consumption and investment. 2. Identify the various approaches in explaining theories of consumption. 3. 3.Understand the theories of investment behaviour 4. Assess and evaluate the macroeconomic goals and policies. **5.** Evaluate the effectiveness of monetary and fiscal policy in explaining general equilibrium.
6.	18BECC06	Statistical Methods	1. Enhance knowledge on the concept of statistics and the ways of mobilizing data. 2. Gain knowledge on the various methods of presenting data. 3. Acquire skills in calculating basic statistical parameters independently 4. Assess the ways of measuring the inter-relationship among variables 5. Interpret the calculated statistical indicators based on the acquired knowledge.
7.	18BECC07	Economics of Growth and Development	1. Have knowledge about concepts and definition of growth and development. 2. Acquire basic knowledge on the issues and ongoing debates on development. 3. Comprehend the policy implications of models and theories for the economy 4. Assess the various strategies of growth and development. 5. Apply the various principles of growth and development to Indian situation.
8.	18BECC08	Money and Banking	1. Outline the functions of money and its unique position in the economy. 2. Acquire an understanding of the theories of money. 3. Comprehend the role of commercial banks in the financial system. 4. Learn the relevance of Central bank in controlling the financial system. 5. Critically review the significance of monetary policy in a developing economy.
9.	18BECC09	Indian Economic Issues	1. Understand the factors impeding development. 2. Comprehend the relationship between population growth and economic development. 3. Examine the significance of capital formation and national income estimation. 4. Evaluate the issues related to unemployment and measures to fight

			unemployment. 5. Critically review the problems of poverty and unemployment in India.
10.	18BECI03	Computer Applications in Economics	1. Have knowledge to work with MS word 2. Have basic skills in data entry and data formatting. 3. Have exposure to quantitative tools and charting the data. 4. Apply simple statistical techniques to economic problem 5. Be able to prepare presentations for seminars /conference in PowerPoint mode.
11.	18BECC10	Public Finance	1. 1.Understand the meaning and importance of public finance 2. Recognize the sources of public revenue and its allocation. 3. Comprehend the theories of public expenditure and its impact on various sectors. 4. Evaluate the pros and cons of public debt 5. 5.Review the budget and highlight its impact on the economy
12.	18BECC11	Financial Markets and Institutions	1. Acquire basic knowledge of the features of the Indian financial system. 2. Apprehend the structure and functioning of Indian money and Capital markets. 3. Comprehend the interlink between money market and capital market 4. Be familiar with the operation of stock exchange market in India. 5. Critically review the functioning of non-banking financial intermediaries.
13.	18BECC12	Agricultural Economics	1. Know the significance of agriculture in national development 2. Understand the issues related to agricultural sector. 3. Assess the problems of agricultural labour and agricultural marketing. 4. Able to assess critically agricultural price policy and food security issues. 5. Pinpoint suitable strategy for overall development of agriculture.
14.	18BECC13	Industrial Economics	1. Have knowledge about issues and principles of industrial development 2. Understand various sources of finance for industry. 3. Comprehend the different indices of productivity measurements 4. Analyse the impact of globalization on different types of industries

			5. Evaluate recent developments in industrial policies.
15.	18BECC14	International Economics	1. Able to know the basic concepts in International trade. 2. Be familiar with the theories of international trade. 3. Understand the concepts and components of balance of payments. 4. Analyse current issues and policies of international trade. 5. Review the role played by international institutions in facilitating trade.
16.	18BECC15	Basic Econometrics I	1. Know the basic concepts in Econometrics 2. Understand the methodology of Econometric Research 3. Comprehend the use of regression analysis analysing economic data. 4. Familiarise the use of computer software estimate models and interpret the results. 5. Apply econometric techniques to validate economic theories
17.	18BECC16	Tamil Nadu Economy	1. Know the basic features and issues pertaining to Tamil Nadu 2. Evaluate the major issues and development process in agriculture in Tamil Nadu. 3. Appraise the various policy measures relating to Industrial development in Tamil Nadu 4. Examine the developments in service sector in Tamil Nadu. 5. Evaluate critically the growth process in Tamil Nadu.
18.	18BECC17	Economics of Infrastructure	1. Understand the key issues and problems of infrastructural development. 2. Comprehend the need for regulating infrastructural sector. 3. Be able to explain the rationale of pricing strategies adopted in infrastructural sectors. 4. Be able to evaluate the Government policies and reforms in infrastructural sectors. 5. Develop critical thinking on possibilities and challenges in balancing the interest of stakeholders in infrastructural development.
19.	18BECC18	Economics of Gender	1. Know the basic concepts in gender and development 2. Assess women work participation in various sectors in the economy 3. Comprehend the role of women in decision making. 4. Have knowledge about the legal status of

			women in India. 5. Critically evaluate policy measures for women empowerment.
20.	18BECC19	Urban Economics (Self study)	1. Know the fundamental concepts in urban economics. 2. Trace the evolution of cities and urban areas. 3. Highlight the causes for urban growth. 4. Assess the economic issues and problems of urbanization. 5. Review the Government policy towards urban growth.
21.	18BECC20	Economics - Computer based Test	
22.	18BECC21	Project	
23.	18BECC22	Health Economics	1. Have knowledge on concepts, definition and importance of health economics. 2. Understand the indicators related to health status. 3. Analyse the trends in health expenditure by the government 4. .Assess and evaluate the growth of health care services 5. Evaluate the role of key players in providing the health care services in India.
24.	18BECC23	Environmental Economics	**1.** To know the basic concepts in environmental Economics **2.** Have an insight about the theories pertaining to environmental issues. **3.** To understand the various components of environmental quality. **4.** To examine the policies relating to environmental education and management 5. To evaluate policy solutions to environmental issues.
25.	18BECC24	Economic Thought	1. Know the evolution of Economic Thought. 2. Identify various approaches in Economic Thought. 3. Apprehend the evolution of economic ideas in ancient India. 4. Ascertain the contribution of Indian economists to economic literature. 5. To investigate the applications of various schools of thought in the current economic scenario
26.	18BECC25	Human values and professional ethics for Economists	1. To understand the importance of ethics and values in life and society. 2. To realize the value of harmonious relationship based on trust and respect in their life and profession.

			3. To imbibe moral and social values and loyalty 4. To realize the need for engaging themselves in lifelong learning. 5. To understand the ethical concept of society and be acquainted with the working environment.
27.	18BECC26	Economics of Entrepreneurship	1. Have knowledge about attraction for and challenges of an Entrepreneur. 2. Understand Entrepreneurship scenario in the economy. 3. Comprehend the problems and issues of MSME in our country. 4. Evaluate the role of Government machinery, Institution's and support system. 5. Have exposure to the rudiments of preparing a business plan.
28.	18BECC27	Basic Econometrics II	1. Have knowledge on model specification errors. 2. Detect problems like Multicollinearity, Hetroscadasticity and autocorrelation 3. Acquire skills in estimating non-linear functional forms. 4. Comprehend the role and use of distributed lag models in economics. 5. Ability to identify the econometric problems in a model estimation with computer software.
29.	18BVCI02	Principles of Marketing	1. Demonstrate knowledge of marketing terminology and concepts. 2. Understand the significance of marketing for the success of business entity. 3. Comprehend customer behaviour and pricing strategy in marketing. 4. Apply marketing concepts to real life situation from customer and managerial perspective. 5. Identify and analyse marketing research information.
30.	18BIED01	Micro Economics	1. Know the basic concepts in Micro economics. 2. Understand the different approaches to the behaviour of consumer and the firm. 3. Assess different forms of market structures and price output determination. 4. Evaluate the theories of factor pricing in the current scenario. 5. Apply the principles of microeconomics in decision making in business.
31.	18BIED02	Macro Economics	1. Develop knowledge about concepts,

			definitions and theories of macroeconomics. 2. Understand the concept of national income and its linkage with various sectors 3. Identify the theories of employment and its impact on the economy. 4. Assess and evaluate the various determinants of macroeconomic variables 5. Apply the various principles of macro economics for setting goals and policies
32.	18BCOI01/18BCPI01/18BCCI01	Business Statistics	1. Have knowledge on the methods of data collection and tabulation 2. Be familiar about different forms of data visualization. 3. Expose the students to the methods of calculating averages and dispersions. 4. Develop skills in the use of simple multivariate techniques. 5. Equip the students to apply techniques in solving business problems.
33.	18BCOI02/18BCPI02/18BCCI02	Business Mathematics	1. Know the computation of interest and the annuities 2. Knowledge on matrix algebra, differentiation and integration 3. Understand the applications of matrix algebra 4. Examine the relevance of differentiation in business related decisions. 5. Evaluate the applications of integration in decision making
34.	18BENI01	Current Economic Affairs	1. Know the basic features of Indian economy. 2. Comprehend the significance of agriculture and industry in economic development. 3. Evaluate the recent monetary and fiscal policy. 4. Review the recent tax reforms in India. 5. Assess the impact of economic reforms on Indian economy.
35.	18BECO01	Population Studies (GEC)	1. Gain knowledge on different concepts of demography. 2. Able to assimilate the facts and data available on population. 3. Identifying the problems of overpopulation in the Economy. 4. Create awareness on the impact of population explosions on urban development. 5. Analysing the government policies and measures for better society.

M.A. Economics			
S. No	Course Code	Title of the Course	Course Outcome
1.	17MECC01	Micro Economic Theory-I	1. Have knowledge about utility, cost and revenue. 2. Understand the different approaches to the theory of consumer and firm behaviour. 3. Comprehend the recent developments in the theory of product pricing. 4. Identify the methods for estimating production and cost functions. 5. Evaluate the different approaches to the equilibrium of the firm
2.	17MECC02	Macro Economic Theory-I	**1.** Know the key concepts in Macroeconomics. **2.** Understand the evolution of Macroeconomic theories. **3.** Identify the determinants of consumption and investment behaviour **4.** Evaluate the Macroeconomic goals and policies. **5.** Analyse the implications of Macroeconomics theories.
3.	17MECC03	Mathematical Methods	1. Gain knowledge about mathematical techniques that are widely used in economics. 2. Appreciate the role of derivatives in understanding economic theories. 3. Comprehend the application of optimisation techniques in economic theory. 4. Develop skill to represent economic problems and issues in mathematical terms. 5. Demonstrate understanding of published work in economic and business journals
4.	17MECC04	Demography	1. Know the basic Demographic concepts. 2. Describe the sources of Demographic data. 3. Analyse the theories of fertility, mortality and migrations. 4. Identify the implications of population growth. 5. Apply basic techniques in demographic research and forecasting.
5.	17MECC05	Statistical Methods	1. Demonstrate a sound knowledge of analytical and inferential statistics 2. Ability to conduct simple inferential procedures and interpret the results. 3. Read and understand project reports and journal articles that make use of the concepts and methods 4. Apply statistical concepts and analytical

			skills to analyse real-world economic and business issues 5. Interpret the application and outcomes of statistical techniques
6.	17MECC06	Indian Economic Development and policy	**1.** Knowledge on concepts and measurement of economic development **2.** Understand structural changes in various sectors of the economy. 3. Comprehend the phases in economic reforms. 4. Identify the strategies for the development of the economy. **5.** Evaluate the impact of economic reforms on different segments of the society.
7.	17MECC07	Micro Economic Theory-II	1. Knowledge about market structure, factor pricing and welfare. 2. Understand the different approaches to the theory of firm and distributions. 3. Comprehend the implications of General equilibrium analysis. 4. Evaluating the conditions for optimality. 5. Evolving policy measures for welfare maximisations.
8.	17MECC08	Macro Economic Theory-II	1. Compare and assimilate classical and Keynesian approach to employment-output determination. 2. Understand the importance of wage flexibility and price expectations on output, employment and inflation. 3. Analyse the impact and relative strengths of fiscal and monetary policies in affecting gross domestic product. 4. Evaluate the New classical and New Keynesian approaches to macroeconomic issues **5.** Apply Macroeconomic reasoning to analyse economic problems.
9.	17MECC09	Research Methodology	**1.** Have knowledge on various kinds of research questions and research designs 2. Able to understand methods of data collection and analysis. 3. Identify research problems, develop and formulate hypotheses. **4.** Apply skills in interpretation and report writing. 5. Develop independent thinking for critically analysing research reports.
10.	17MECC10	Economics of Growth and Development	**1.** Know the concepts and theories of growth and development **2.** Understand the various approaches to

			development. 3. Evaluate the relevance of growth models to developing countries **4.** Debate on developmental priorities and policy issues in current scenario. **5.** Acquire skills in identifying research areas related to development issues.
11.	17MECC11	Monetary Economics	**1.** Discern different approaches to the theory of demand for money **2.** Understand the operation of financial markets. **3.** Comprehend the techniques of monetary policy. **4.** Examine the link between financial markets and the real economy **5.** Apply the key models and concepts in monetary economics to current events.
12.	17MECC12	Mini Project	
13.	17MECC13	Public Finance	1. Distinguish between public goods, private goods, merit goods and understand the role market externalities. 2. Demonstrate a good understanding of the principles of taxation, expenditure and budgetary policy. 3. Apprehend federal structure and centre-state financial relations in India. 4. Analyse critically tax reforms and policy choices in India. 5. Undertake research on key issues in Public Finance.
14.	17MECC14	International Economics	**1.** Be familiar with the theories of international trade. **2.** Able to analyse the economic effects of policy intervention in international trade. 3. Examine the instruments and consequences of trade policy measures. 4. Assess the functioning of different trade blocs at the global level 5. Undertake research on issues relating to foreign trade and investment
15.	17MECC15	Econometrics	1. Know the basics of model construction with application in consumption and production theory. 2. Comprehend the application of ordinary least square estimation and diagnostic testing. 3. Apprehend methods to test for and resolve autocorrelation, Hetroscadasticity and Multicollinearity 4. Estimate econometric models using real

			world data. 5. Develop analytical skills in the application of econometric techniques.
16.	17MECC16	Economics of Social Sector and Environment	**1.** Know the basic concepts in education, health and environment 2. Understand the economics of health care and education.. 3. Understand theories of environmental quality. 4. Identify the implication of environmental laws and regulations. **5.** Examine the strategies for environmental protection.
17.	17MECC17	Computer Applications in Economics	1. Get a sound knowledge on data entry and to work with data 2. Build familiarity with data visualizations, descriptive statistics and inferential statistics. 3. Develop skill to use advanced analysis in SPSS. 4. Undertake a basic research project using SPSS as the statistical tool **5.** Proficiency to apply the analytical skills for the real world economic data.
18.	17MECC18	Industrial Economics (Open Book)	1. To comprehend the issues and theories in the field of industrial economics. 2. Demonstrate a sound knowledge of optimum firm size and market structure 3. Impart knowledge on new economic policy and its impact on industries. 4. Evaluate the role of MNCs in industrial growth and development. **5.** Carry out independent research projects in industrial economics
19.	17MECC19	Gender and Development	**1.** Appreciate the role and contribution of women in economic development 2. Understand female work participation and wage differentials across sectors. **3.** Explain gender differences in decision-making and control over resources in national contexts. **4.** Critically evaluate issues related to gender equity and empowerment **5.** Evolve a range of issues for research in gender and development
20.	17MECC20	Internship	
21.	17MECC21	History of Economic Thought	**1.** Have a sound knowledge on the evolution of economic concepts and ideas. 2. Comprehend the growth of various schools of thought and its relevance.

			3. Evaluate the contribution of Indian economic thinkers over the time span. **4.** Critically comment on the contributions of early thinkers and modern economic writers. 5. Examine the significance of these concepts and ideas in relation to the current economic scenario.
22.	17MECC22	Thesis	
23.	17MECI01	Analytical Tools in Research	1. Knowledge in doing simple computations using Excel sheet. 2. Understanding the basics of data entry and importing and exporting data. 3. Comprehend the technique of data visualization and descriptive statistics. 4. Acquire proficiency in computing multivariate statistical techniques. 5. Proficiency to apply analytical skill in research.
24.	17MECM01	India's Current Affairs	1. Know the basic concepts in growth and development 2. Understand the basic issues challenging the Indian economy 3. Comprehend the trends in Sectoral development in India 4. Review the developments in monetary and fiscal policy in India 5. Critically evaluate the impact of policy reforms in the post – globalization period

M. Phil /Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	**19MPEC01 /19PHEC01 -**	**Research Methodology and Quantitative Techniques**	1. Make the students to familiarize with Research Techniques 2. Enable the students to empirically analyse the economic problems 3. Train the students to critically analyse the economic problem with computer softwares 4. Train the students to evaluate and interpret the empirical results from the software computing **5.** Familiarize the students to write the report and document the research work
2.		**Advanced**	**1.** Understand the various concepts and

	19MPEC02 **/19PHEC02** **-**	**Economic Theory**	developments in economic theory. **2.** Evaluate the models in the context of real world situation. **3.** Analyze critically the relevance of the theories. **4.** Examine the concept of welfare economics based on various theorems **5.** Know the role of macro economics based on various models

Department of Hindi

B. A. Hindi			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BFHC01	Bhasha Ka Parichay	1. Learn Basics of Hindi 2. Know different names in Hindi 3. Learn Sentences in Hindi 4. Know Numbers and dialogues in Hindi 5. Learn Precise Writing
2.	18BFHC02	Hindi Grammar and General Essay	1. Learn importance of grammar 2. Understand Shabdhvichar 3. Learn verb, Tense. 4. Learn Gender, Prefix, Suffix 5. Gain Knowledge on different topics.
3.	18BFHC03	Karyalayeen Hindi	1. Learn the language. 2. Learn Official Hindi 3. Learn types of Technical Terminology 4. Know Literary and Official Language. 5. Learn Translation
4.	18BFHC04	Official Correspondence Noting and Drafting	1. Learn types of Letter. 2. Learn noting and drafting 3. Learn concept of Commercial & Business Letter. 4. Learn language used in letters. 5. Learn different types of Technical Terminology.
5.	18BFHC05	Official Language Policy of Government of India and Functional Hindi	1. Study - types of Languages. 2. Know constitutional provisions of offical language. 3. Study different fields of Functional Hindi and Technical Terminology. 4. Know about Institutions. 5. Learn various types of dictionaries.
6.	18BFHC06	**History of Hindi Literature (Ancient and Medieval)**	1. Learn basic concepts of Aadikal. 2. Analyse various literary aspects. 3. Learn basic concepts of Bhaktikaal. 4. Learn literary works & poets. 5. Compare great Hindi poets in BhaktiKaal.
7.	18BFHC07	Introduction to Mass Communication(Print Media)	1. Understand Basic concepts of Mass Communication 2. Know the concept of Public Relation 3. Know the role of Translation in Print Media 4. Understand the relationship between Print Media &Society 5. Learn Terminologies related to Journalism

8.	18BFHC08	Translation Principles and Techniques	1. Know the interrelationship of language & society **2.** Learn methods of Translation **3.** Understand the types of literary and Non-literary Translation **4.** Know the linguistic approach in Translation. **5.** Analyse Problems in Translation & Dubbing
9.	18BFHC09	Novel and Short Stories	1. 1.Understand different stages of Hindi Novels. 2. Know relavance and importance of Usha Priyamvada'sNoval. 3. Analyse problems of women. 4. Learn development of short stories. 5. Analyse problems in society.
10.	18BFHC10	History of Hindi Literature (Modern Era)	1. Learn various situations & specialties of Aadhunik kaal 2. Study develop & Literary persons of Chayavad 3. Study develop & Literary persons of Pragativad 4. Study develop & Literary persons of Prayogvad 5. Learn development of Nayi kavita & kavi
11.	19BFHC11	Ancient Poetry	1. S1.Study development of poems aktikaal Re Reetikaal 2. Learn Dohas of Various poets. 3. Learn poems of Soordas. 4. Understand Baktibhav. 5. Know literary works of ancient poets.
12.	18BFHC12	Principles of Journalism and Press Communiqué	1. Learn about Journalism 2. Gain knowledge about various dimension of Journalism. 3. Learn rules of press 4. Know difficulties of Agencies 5. Learn about Reporting
13.	18BFHC13	Drama and One Act Play	**1.** Study development of Hindi Drama 2. Analyse Various features of Madhvi Drama 3. Study development of Hindi Ekanki 4. Analyse story & character of different types of one act play 5. Evaluate one act play
14.	18BFHC14	Introduction to Mass Communication (Electronic Media)	**1.** Learn Basics of Mass Communication. 2. Learn about Advertisement in TV & Radio 3. Learn types of Program in T.V & Radio 4. Learn main features of Indian Broadcasting **5.** Analyse Education through media
15.	18BFHC15	Introduction to Tamil Literature	1. Learn Origin and Development of Tamil Language

			2. Study important poets & poems 3. Learn main trends in shaiva Bakti 4. Learn main trends in Vaishnav Bakti 5. Know about Bhakti & his works
16.	18BFHC16	Women Empowerment	**1.** Learn various stages of women in society **2.** Study Revolutions & social reforms for women **3.** Women Empowerment in different society **4.** Know women situation in Hindi literature. 5. Learn Role of women in media.
17.	18BFHC17	Bharathiya Kavya Shastra	**1.** Learn History and types of kavya. **2.** Learn theories of Ras & Alankar **3.** Learn theories of Dhwani **4.** Learn theories of Reeti **5.** Learn theories of Vakrokti
18.	18BFHC18	Soordas- (Self Study Course)	1. Learn social & Cultural situations of Baktikaal 2. Learn origin & Development of Krishna bakti 3. Study poems of Krishna bakti & Ashtachap kavi 4. Learn soordas's Baal varnan & Bhramar Geet 5. Know Importance of Soor & his works.
19.	18BFHC21	Modern Poetry	**1.** Know various stages of poetry & poems. **2.** Study panchavati Kavya & Character. **3.** Analyse the poem of Dinkar **4.** Analyse the poem of Bacchan **5.** Analyse the poem of Gupt
20.	18BFHC22	Advertisement in Hindi	**1.** Learn History & Development of Advertisement. **2.** Study types of Advertisement **3.** Learn language style & Structure of Advertisement **4.** Study about Advertisement given in print & electronic media **5.** Analyse the problems of Translation in Advertisement
21.	18BFHC23	National Integration and Literature	1. Learn History & important aspects of National Integration 2. Know the role of religious things & National leaders 3. Study National integration in Bharatendu Yug 4. Study poems & their Contributions 5. Know the Role of media in National Integration.
22.	18BFHC24	New Literary Forms in Hindi	**1.** Learn origin & Development of prose. 2. Learn about Khadiboli & need of new literary forms.

			3. Analyse literary forms of Rekha Chitra 4. Analyse literary forms of Jeevani 5. Analyse literary forms of Reportaj
23.	8BFHC25	General Linguistics	1. Understand place of language in Human life. 2. Learn linguistics and Grammar. 3. Analyse Phonetical changes. 4. Learn syntax 5. Analyse semantical changes.
24.	18BFHC26	Dalit Sahitya	**1.** Learn advantage of Dalit Literature **2.** Learn dalit Literature after independence. **3.** Learn dalit in different fields **4.** Critical study of Dalit in premchand's stories. 5. Review Dalit sahitya ka bhavishya

M. A. Hindi			
S. No	Course Code	Title of the Course	Course Outcome
1.	18MHJC01	Language and Communication-Principles and Techniques	1. Comprehending concept of language and communication 2. Study Communication models 3. Apply various types of communication 4. Analyse communication Ethics 5. Analyse political and government communication
2.	18MHJC02	Development of Hindi Journalism (Pre Independence)	1. Learn values of Journalism 2. Recall historical background of Journalism 3. Analyse different eras of Journalism. 4. Evaluate Hindi Journalism in south 5. Evaluate Hindi Journalism in foreign countries.
3.	18MHJC03	Ancient Poetry	1. Learn various stages of Hindi poetry 2. Analyse poems of different poets – Soor & Tulsi 3. Analyse poems of different poets – Meera & Bihari 4. Learn about Reetikal 5. Remember importance of various poets & poems.
4.	18MHJC04	Prose and Drama	1. Understand growth of Nibandh & importance of Nibandhar 2. Learn contemporary issues in Drama 3. Learn development of Novel 4. Understand different problems through Stories 5. Know values through Ekanki
5.	18MHJC05	History of Hindi	1. Learn Classification in Hindi literature

		Literature (Aadi kaal and Madhya Kaal)	2. Familiar with salient features of Bhaktikaal 3. Familiar with Nirgunbhakti & poets 4. Familiar with Sagunbhakti & poets 5. Familiar with Krishnabhakti & poets
6.	18MHJC06	Translation-Principles and Tchniques	1. Learn about process of Translation in various fields 2. Learn skills and art of Translation 3. Learn types of literary Translation 4. Learn types of Non literary Translation 5. Learn characteristics of good Translator.
7.	18MHJC07	History of Hindi Language and Structure of Hindi	1. Learn origin and growth of language 2. Analyse dialects. 3. Learn about khadi boli. 4. Learn important aspects of Linguistics. 5. Learn development of devanagari lipi & structure of Hindi.
8.	18MHJC08	Translation– Application and Problems	1. Analyse problems of Translation in Literature 2. Analyse problems of Translation in Banking 3. Analyse problems of Translation in Journalism 4. Analyse problems of Translation in Business & Sports 5. Apply Translation skills in various Languages Hindi,Tamil & English
9.	18MHJC09	Mass Communication (Electronic Media)	1. Learn concepts of Mass Media 2. Learn how to telecast 3. Learn about advertisement 4. Learn rules & regulations of broadcasting and telecasting 5. Learn National Integration & Education through media
10.	18MHJC10	Hindi Journalism and Information Technology	1. Recall historical devolopment of Technology 2. Know role of Information Technology in Journalisam 3. Analyse role of Computer in Journalism 4. Recall historical devolopment of Internet Journalism 5. 5. Study about websites of English and Hindi Newspapers
11.	18MHJC11	Development of Hindi Journalism (Post Independence)	1. Study devolopment of Journalism after independence 2. Learn different dimensions of Journalism 3. Analyse Journalism as Business 4. Analyse current situations of Journalism 5. Evaluate future of Journalism
12.	18MHJC13	History of Hindi Literature	1. Study the trends of Adhunik kal 2. Study Bharatendu yug

		(Aadhunik Kaal)	3. Analyse poetical changes 4. Study Nayi kavita. 5. 5. Evaluate different prose forms in literature
13.	18MHJC14	Modern Poetry	1. Learn Maithilisharan Gupt (saket) 2. Learn Jayashankar Prasad (Chinta) 3. Learn Saroj Smriti 4. Analyse Rashmirati 5. 5. Critical study of Andha Yug
14.	18MHJC15	News Reporting Art of Editing, Layout, Printing and Publication	1. Understanding new concepts 2. Knowledge of editing and presentation 3. Qualification of a reporter 4. Learn technical aspects of editing 5. Knowledge of printing offset and screen printing
15.	18MHJC16	A Case Study of Women Problems (Open Book Test)	1. Learn different aspects of women in pre-independent India 2. Learn different aspects of women in post-independent India 3. Critical analysis of women in 21st century 4. Knowledge of socio-economic freedom of modern women 5. Analytical study of problems of women in different situations
16.	18MHJC17	Official Language Policy and Functional Hindi (Self Study)	1. Learn society, language inter-relation and learn acts and rules of constitution 2. Learn about functional Hindi 3. Study of technical terminologies 4. Analyse promoting the use of Hindi in different institutions 5. Study language modernization and standardization
17.	18MHJC18	Critics And Criticism	1. Learn origin of criticism 2. Study eminent critics in Hindi literature 3. Understanding Aalochak and Aalochana 4. Analyse relation between critics and criticism 5. Updating knowledge of contemporary criticism
18.	18MHJC20	Fundamentals of Research Methodology	1. Learn needs and importance of research 2. Learn preparation of synopsis 3. Knowledge about material collection 4. Analyse literary and scientific research **5.** Review of the research

M. Phil/ Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPHI01/ 19PHHI01	Advanced Research Methodology for Hindi	1. Develop the knowledge in specific area of literature 2. Expose the Students with various forms of Hindi Literature 3. Women Empowerment through Literature
2.	19MPHI02/ 19PHHI02	New Literary forms in Hindi and Literary Criticism	1. To lay strong foundation to take up research Project and Programmes. 2. Aquire the skill to be placed as Lecturers, Research Guide etc . 3. Learn innovative methods in research
3.	17MPHI03	Samaj par Samajik Madhyamone ka Prabhaav	1. Knowledge about communication and society 2. Knowledge about types of Mass Media 3. Understand development of Social Media 4. Analysis of social media in different fields 5. Comparison of media in Past & Present Society
4.	19MPHI03 A	Chitra Mudgal aur Shakuntala Sirotia ke Baal Sahitya ka vishleshanatmak Adyayen	1. Knowledge about children literature. 2. Knowledge about author and their works. 3. Analysis of Chitramudgal's children literature. 4. Analysis of Sakuntala Sirotia's children literature. 5. Comparison of the works of both authors
5.	**19MPHI03**	**Samkaaleen** Mahila Upanyas Lekhan: Parampara aur Pravruthiyaam (ChandrakanthakeVishesh Sandarbh mein)	1. Understand aspects and trends of contemporary Hindi Novels 2. Know about the evolutionary changes of women novelist 3. Know relevance and importance of Chandrakanta 4. Role of women in the contemporary era 5. Analyse women problems in the Society.
6.	19PHHI03A	Sathottari Hindi Kahani mein Naari.(Chuni Hui kahaniyon ke vishesh sandarbh mein)	1. Understand the status of woman in different period. 2. To know the changes in social life of woman 3. Know Social Reforms 4. Know important Story Writers 5. Understand the changing trends of women
7.	19PHHI03B	Hindi aur Malayalam Bhasha Ki Utpatti Evam Shabdaavali – Ek Adyayan	1. Learn Origin and growth of Hindi Language 2. Learn Origin and growth of Malayalam Language 3. Impact of Sanskrit words in Indian Languages 4. Analyse and apply Sanskrit words in Hindi 5. Analyse and apply Sanskrit words in Malayalam

8.	19PHHI03C	Pankaj Subeer ki Kahaniyone mein Sthri Vimarsh	1. Knowledge about different story forms. 2. Knowledge about author and their works. 3. Know about the stories of th author. 4. Analyse the stories. 5. Relevance of the stories in present era

Department of English

B. A. English			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BENC01	History of English Literature I - From Renaissance to the Romantic Age	1. Know the history of English literature 2. Understand the basic forms of literature 3. Comprehend the historical and social background of English literature 4. Know the great writers of each age and their works 5. Apply the knowledge of English literary history to answer in competitive exams
2.	18BENC02	Grammar and Conversational English	1. Understand the different parts of speech and use them in sentences appropriately 2. Understand correct usage of grammar 3. Use effective communication strategies to participate in group and class discussions 4. Use grammar in formal and informal context 5. Reflect on and evaluate the conversational structures strategically in discussions
3.	18BENC03	One-Act Plays	1. Know One-act play as a genre and issues fit for the genre 2. Understand the characteristics and techniques of One-act play 3. Apply to the current situations to see the contemporary relevance 4. Analyse the nuances of the language used as a tool 5. Derive aesthetic pleasure from the reading of the play
4.	18BENC04	History of English Literature II - From Victorian Age to the Contemporary Age	1. Acquire working knowledge of historical and cultural contexts of English Literature pertaining to the specific ages 2. Know about the great writers and their works 3. Understand the basic forms of literature 4. Apply the knowledge of English literary history to answer in competitive exams

			5. Identify the literary characteristics of Literature from Victorian to Contemporary age
5.	18BENC05	Phonetics	1. Be able to give an overview of the organs of speech used in vocalization as a background to the main processes of the initiation of speech 2. Improve their pronunciation by focusing on short sentences using standard word stress patterns 3. Be able to appreciate how stress, rhythm and intonation change the meaning of a word, sentence, message, etc 4. Be able to analyze situations in which the meaning of a word or message has changed because of the vocal features 5. Be able to speak the language with enhanced phonetic features
6.	18BENC06	Prose	1. Learn different prose styles of different writers 2. Acquire the ability to imitate and improve their writing style 3. Understand the types of prose 4. Apply the writing techniques of prose 5. Analyse and evaluate prose writers
7.	18BENC07	Literary Forms	1. Demonstrate knowledge of various literary forms and their significance 2. 2. Demonstrate knowledge of English texts and traditions of literature written in social, cultural and historical context **3.** Tailor writing for various audiences and purposes 4. Analyse instances of various types of literature 5. Analyse literary works from various genres for their structure, meaning and terminology
8.	18BENC08	Creative Writing	1. Recognise the elements needed to produce a piece of creative writing and be able to use these elements 2. Use information from a variety of resources to extend their knowledge and skills for different purposes of writing 3. Write with clarity and purpose, producing short scenes that include use of imagery, characterization, and elements of plot development 4. Utilize imagery and figurative language in poetry and a variety of poetic forms and write with clarity and purpose,

			producing poetry that includes use of imagery, poetic form, and poetic devices 5. Utilize imagery, characterization and elements of plot in story scenes and write original story scenes
9.	18BENC09	Drama	1. Learn to differentiate Drama and Theatre Techniques 2. Acquire the skills of dialogue writing 3. Understand the types of Drama 4. Analyse the elements of Drama 5. Appreciate the kinship between Drama and life
10.	18BENC10	Short Stories	1. Learn short story as a form of literature 2. Understand the different types of short stories 3. Examine the different elements in a short story 4. Analyse the short stories comparing with real life situations 5. Analyse the themes of short stories
11.	18BENC11	English for Media	1. Identify the key parts of a newspaper and find key ideas in a news article 2. Understand the necessary language skills for different media 3. Apply language skills and presentation skills in various modes of writing 4. Write news stories and analyse features of film dialogues and film reviews 5. Create blogs or web Magazines with their own original contents
12.	18BENC12	Diasporic Writing in English	1. Acquisition of the knowledge of diasporic writing 2. Study of different kinds of diasporic experiences 3. Analyse the language and techniques of the diasporic writers 4. Study the problems represented in the works of diasporic writers 5. Appreciation of values and struggles of the diasporic writers
13.	18BENC13	Indian Writing in English	1. Learn how Indian writers portray India 2. Understand the changing trends in Indian Writing in English 3. Differentiate the writing styles of various Indian writers in English 4. Analyze the influence of English Writers on Indian English writers 5. Appreciate the literary talents of native writers
14.	18BENC14	American Literature	**1.** Knowledge about diverse groups of

			writers on what they reflect about American experiences and characters. **2.** Identify key ideas, works, authors, historical or cultural events in the literature of different periods or regions. **3.** Demonstrate knowledge on the development of literary forms during different periods 4. Analyze works as individualistic expression or communal of different literary periods. 5. Evaluate the aesthetic principles that guide the scope and variety of works in arts and humanities
15.	18BENC15	African American Writing	1. Know African American writing at different periods 2. Study different themes in the works of African American writers 3. Analyse the language and techniques of the African American writers 4. Study the problems of the African American community **5.** Appreciate values and culture of the African American community
16.	18BENC16	Women Writing in English	1. Know women writing in English at different periods 2. Study different themes in the works of women writing in English 3. Analyse the language and techniques of the women writers 4. Study the problems of the women as reflected in the literary works 5. Appreciate feminine sensibility and strength
17.	18BENC17	Basics of Translation	1. Knowledge about the scope and importance of translation 2. The importance of language and the skills required for a translator 3. Understand translation as a bridge between cultures 4. Apply theories in the process of translation 5. Analyse the problems involved in translation
18.	18BENC18	Journalism – Print Media	1. Learn the history of print journalism 2. Understand the basic principles mechanics of journalism 3. Understand the mechanics of journalistic writing 4. Apply the skills of editing and proof

			reading 5. Analyse the news story
19.	18BENC19	Fiction (Self Study)	1. Study fiction as a literary genre and its characteristics 2. Understand literature as an expression of human values within the historical and social context 3. Stimulate a greater appreciation of language as an artistic medium and of the aesthetic principles that shape literary works 4. Examine the techniques of different novelists 5. Deepen students' awareness of the universal human concerns that are the basis for literary works
20.	18BENC22	Shakespeare	1. Learn how Shakespeare is different from his predecessors 2. Understand the difficulties involved in writing and staging drama. 3. Acquire the ability to differentiate between the techniques of drama 4. Apply the dramatic devices and learn to write and enact Drama 5. Appreciate the Dramatic genius of Shakespeare
21.	18BENC23	New Literatures	1. Acquisition of knowledge in New Literature as a genre 2. Understand the colonial experience as depicted in the works 3. Comprehension of the themes and cultures in New Literatures 4. Analyse the contemporary ideas in New Literatures 5. Identify the conflicts and perspectives in New Literatures
22.	18BENC24	Indian Immigrant Literature	1. Examine the life of diasporic Indians and their relationship with the ancestral land 2. Value difference among people and express an appreciation of cultures (language, religion, philosophy, family and community structures, and material culture) 3. Develop their skills in discussion, literary analysis, and written response 4. Summarize, analyze, integrate, and draw conclusions about particular works of literature 5. Analyse the culture and historical developments in India's colonial and post

			colonial history
23.	18BENC25	Poetry	1. Know poetry and it's kinds at different ages 2. Study the poets' view of life through poetry 3. Analyse the language and techniques used in poetry 4. Cultivate values for life through study of poetry 5. Appreciate poetic beauty and values
24.	18BENC26	Basic Principles of Literary Criticism	1. Acquire knowledge of the basic principles of literary criticism 2. Understand the tools for applying literary criticism and theory 3. Apply the various literary theories to literature 4. Analyse critical approaches of prominent literary critics 5. Evaluate the significance of literary criticism and literary theory in contemporary times
25.	18BENC27	Literatures in Translation	1. Know Literature in translation at different periods 2. Study of different techniques used by the translators 3. Analyse the loss of meaning in the process of translation language 4. Study the myriad aspects of Literature in translation 5. Appreciate the art of translation
26.	18BENV01	English for Competitive Examinations (Value Added Course)	1. Exposure to different oral and written compositions for different purposes and for different audiences 2. Knowledge of relation between the textual components through lexical and grammatical cohesion devices 3. Ability to extract and infer information from spoken and written texts 4. Ability to interpret and analyse texts 5. Competency to produce oral and written presentations in English
27.	18BENO01	Popular Fiction (Generic Elective Course)	1. Acquire the habit of reading 2. Learn to appreciate popular fiction 3. Understand the metaphorical and symbolic meanings in fiction 4. Identify the underlying themes 5. Analyse the contemporary relevance of popular fiction
28.	18BTMI01	Discipline Specific Elective Course - I	1. Know the basic and simple conversational strategies

		Spoken English	2. Understand the need and use of grammar in speech 3. Speak English fluently according to the situation 4. Analyse the level learnt by listening to their own speech 5. Speak English with confidence
29.	18BENI03	Computer Applications in English	1. Access MS Word and other basic applications of computer 2. Understand and know the usage of internet 3. Type and edit text using MS Word 4. Prepare MS PowerPoint presentations 5. Analyse data using spread sheets

M. A. English			
S. No	Course Code	Title of the Course	Course Outcome
1.	17MENC01	Prose	1. Approach prose texts in terms of genre and canon 2. Develop an appreciation of all types of essays 3. Ability to compare and contrast the essay of the 15th century with those of the present century 4. Analyse various forms of discourses in prose writing 5. Explore themes, characters and other idiosyncrasies specific to the prose writers
2.	17MENC02	Poetry	1. Understand the genre and different types of poetry 2. Know the important writers, major changes that came through different ages 3. Derive aesthetic pleasure in the reading of poetry 4. Cultivate values through poetry 5. Familiar with the poetic techniques
3.	17MENC03	British Literature (Post World War II)	1. Display comprehensive knowledge of British literature after the World War I & II 2. Identify literary characteristics of this period of British Literature 3. Evaluate the social, cultural and historical aspects British literature Post World War I & II 4. Write analytically about the British Literature 5. Appreciate literary works of the period

4.	17MENC04	Indian Writing in English	1. Display comprehensive knowledge of Indian Writing in English 2. Critically evaluate the works on social, cultural and historical perspectives 3. Analyse characteristics unique to Indian Writings in English 4. Critical evaluation of writers of Indian writing in English 5. Appreciate the Indianism
5.	17MENC05	Linguistics & Phonetics	1. Demonstrate knowledge of elements of phonetics 2. Ability to distinguish phonetics, phonology, morphology, syntax, semantics, and pragmatics 3. To understand the nature & function of articulation 4. Expertise in correct pronunciation of English words 5. Acquisition of professional skills in linguistics
6.	17MENC06	Cyber English	1. Learn the importance of Cyber English 2. Understand the difference between conventional English and cyber English 3. Apply net speak in all kinds of cyber communication 4. Analyse the current and future status of Cyber English 5. Appreciate the purpose and the relevance of Cyber English
7.	17MENC07	Fiction	1. Acquire a comprehensive knowledge of Fiction as a literary genre 2. Identify the distinct social, cultural and historical characteristics of the fiction 3. Critically analyse fiction for their stylistic features 4. Evaluate various kinds of fiction 5. Acquire skills in arranging ideas and thoughts and write fiction
8.	17MENC08	Shakespeare	1. Understand the dramatic forms of Shakespeare 2. Apply dramatic techniques of Shakespeare 3. Analyse characters, plots, and themes 4. Appreciate Shakespeare through theatrical production and film adaptation 5. Appreciate the uniqueness of Shakespeare
9.	17MENC09	New Literatures in English	1. Acquire the knowledge of world's literary traditions 2. Understand the themes and issues specific to New literatures 3. Identify cultures and encounters between

			cultures 4. Acquire knowledge about transculturation, global diffusion and cross-culture 5. Analyse motifs, styles, and techniques in New Literature
10.	17MENC10	Women Writing in English	1. Acquire insight into the works written by women 2. Analyse and engage in theoretical and scholarly debates about issues in women writings in English 3. Recognize the intersections between gender and other social and cultural identities 4. Explore themes and narrative strategies of women writers 5. Acquire professional knowledge and skills for teaching and research in women writing in English
11.	17MENC11	Translations in English	1. Understand the need and importance of translation 2. Learn translation theories 3. Study the different cultures through translated works 4. Understand the different issues and problems related to translation 5. Analyse the techniques involved in translation and attempt translation of works
12.	17MENI01	IDC - Inter Disciplinary Course – English for Academic and Professional	1. Demonstrate knowledge of English for academic and professional purposes 2. Able to use English effectively in group discussion 3. Acquire skills of context based communication 4. Apply knowledge of writing strategies to produce academic texts 5. Expertise language skills for different purposes
13.	17MENC13	Short Story (Self-Study)	1. Gain knowledge of short story as a genre of literature and learn its characteristics 2. Understand the literary texts in different socio political and cultural contexts 3. Understand different types of short stories and techniques specific to types 4. Analyze the works for universality of themes and contemporary relevance 5. Develop language and literary style through reading fiction
14.	17MENC14	American Literature	1. Understand the place of American Literature among world literatures 2. Understand the social and cultural scenarios in American Literature

			3. Understanding issues specific to American writers 4. Expertise in critically analyzing the themes, techniques and style of American Literature 5. Acquisition of professional skills for teaching and research in American literature
15.	17MENC15	Eco Literature	1. Understand the origin and development of Eco Literature 2. Explore the kinship between human and environment in Eco Literature in prescribed texts 3. Understand the key concepts in Eco Literature 4. Gain insight about vitality of natural resources and preservation of nature 5. Acquire the professional knowledge in Eco literature for teaching and research
16.	17MENC16	Modern Trends in Literary Criticism Theory & Criticism	1. Learn various approaches to literature 2. Acquire the knowledge of modern literary theories 3. Learn key principles of different theories and criticism 4. Acquire the skills to apply appropriate theories to a particular work 5. Analyse literary texts using various approaches
17.	17MENC17	Research Methodology	1. Demonstrate the knowledge of MLA research methodology 2. Learn to identify the research problems 3. Understand the fundamentals of conducting a research 4. Apply the skill of documentation in research writing 5. Acquire skills in editing, proofreading, and other related skills for research writing
18.	17MENC18	Introduction to English Language Teaching	1. Learn the history, principles and practices of teaching English as a second language in India 2. Understand the distinction between language learning and language acquisition 3. Learn the different approaches, methods and techniques to teaching English as a second language 4. Apply appropriate techniques of English Language Teaching 5. Acquire professional skills in research
19.	17MENC19	Preparatory Course for NET/SET (Open Book Test)	1. Understand the types of questions 2. Acquire skills in identifying key features of branches of literature 3. Understanding major trends and concepts in

			English literature 4. Analyse the characteristics of different fields of English literature 5. Expertise in answering critical questions
20.	17MENM01	Business English	1. Learn the importance of Business English 2. Learn to write different types of official communication 3. Understand the difference between Formal and Informal English 4. Learn writing for specific purposes 5. Acquire professional etiquettes of writing skills
21.	17MENC20	Drama	1. Get familiarized with the major dramatist of the world 2. Learn different kinds of Drama 3. Understand the elements of Drama 4. Learn the application of theatre techniques 5. Analyse Drama in its socio-political contexts
22.	17MENC21	Thesis	1. Understand the various steps involved in identifying the research problem 2. Learn the methodology of writing thesis 3. Acquire the skills in using secondary sources 4. Analyse the selection of the supporting materials 5. Acquire originality in writing thesis

M. Phil			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPEN01	Research Methodology for English	1. Demonstrate the knowledge of MLA research methodology 2. Learn the skill of effectively searching and gathering materials for research 3. Learn scientific approach to research 4. Develop research aptitude 5. Apply the skill of documentation in research writing
2.	19MPEN02	Contemporary Literary Criticism	1. Acquire knowledge of the fundamental principles of literary criticism 2. Understand the paraphernalia for applying literary criticism and theory 3. Apply the various literary theories to literature 4. Analyse critical approaches of outstanding literary critics

			5. Evaluate the significance of literary criticism and literary theory in contemporary research

Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PHEN01	Research Methodology for English	1. Demonstrate the knowledge of MLA research methodology 2. Learn the skill of effectively searching and gathering materials for research 3. Learn scientific approach to research 4. Develop research aptitude 5. Apply the skill of documentation in research writing
2.	19PHEN02	Contemporary Literary Criticism	6. Acquire knowledge of the fundamental principles of literary criticism 7. Understand the paraphernalia for applying literary criticism and theory 8. Apply the various literary theories to literature 9. Analyse critical approaches of outstanding literary critics 10. Evaluate the significance of literary criticism and literary theory in contemporary research

Department of Music

B.A Music			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BMUC01	Theory of Indian Music -I	1. The embodiment of Nada & Power of music are the elements applied in the life of mankind. The awareness is the sources by learning this unit. 2. Rhythm is having the commanding power over the movable aspects in the Universe & so music is also controlled by various kinds of Talas 3. Raga, being the back bone of our music, students get the knowledge of characteristic features of Mela&Jenya Ragas 4. The first and foremost form which having both dhathu&mathu for the beginners is Gita. Jathiswarais the keynote address for the beginners to know about the svarasancharas of various ragas. 5. The main and essential part of the compositions a Tanavarna, Padavarna, Kriti and Kirtana and learni of these forms helps the students to strengthen th ability
2.	18BMUC02	AbhyasaGanam-Vocal Practical -I	1. Students acquire Svaragnana to lay the foundation of music 2. Jandavarisais are important for getting stability a firmness to the voice. 3. The fecebility of the permutation & combination of svaras are gained by Dhatuvarisai and Melsthaivarisai 4. Learning the basic SaptaTalas are eye opener to the beginners to know about the difficulties in keeping Tala. 5. The easiest composition and each svara having t sahithya is the basic composition for the beginners
3.	18BMUC03	Violin/Veena - Abhyasa Ganam-Practical-I	1. Students acquire Svaragnana to lay the foundation of music. 2. Jandavarisais are important for getting stability and firmness to the voice 3. The fecebility of the permutation & combination of svaras are gained by Dhatuvarisai. 4. Learning the basic Tala techniques
4.	18BMUC04	Musical Forms	1. Acquring theoretical knowledge of Padam makes o to familiar with the various types of Nayaka – Naya bhava and Madhurabhakthi , which helps to beco a composer. 2. ChandaTala is a renowned and highly complicat tala varieties. By learning this, a student can achie knowledge about predominant features of Tala. 3. Coin different Ragas in a single composition is

			lesson gained by a student and make them to learn t rules to be adopted in selection of ragas. 4. Since Dance and Music are allied Arts, knowi musical forms that connected to dance is ve relevant 5. To become a vocalist for dance, learning musi forms connected to dance and dance dramas will useful. By learning obsolete forms, students will more thorough with the music of the past.
5.	18BMUC05	AbhyasaGanam-Vocal Practical-II	1. 1,2,3 The easiest composition and each svara havi the sahithya is the basic composition for t beginners. 2. Svarajati, an extension of Gita, enable the students get more access to Raga through svara and sahithya 3. Lakshana Gita gives the introduction of the raga a by learning this musical form, it will be easy become familiar with that particular raga.
6.	18BMUC06	Violin/ Veena-AbhyasaGanam-Practical -II	1. 1&2. Through svaranjana and raga gnana,stude can lay the foundation of music. 2. 3 &4. Become thorough with the finger technique the instrument 3. Student will be more familiar with the playing and finger technique of svara and sahithya through this type of musical form
7.	18BMUC07	Musicology- I	1. First and foremost scale has been given knowledge to invent new scales and ragas 2. For music physic is more important. Body itself is the GathraVeena. Unit seeds the importance of maintaining the body to be fit enough. 3. The back bone of concert music is ManodharmaSangitha. By knowing various divisions, one can adopt the rules and sing properly. 4. 4&5. Biography, contributions and the context of songs creation are gained
8.	18BMUC08	Sabha Ganam – Vocal Practical- I	1. 1,2 &3. First and foremost musical form helps to develop svaragnanam, Talagnanam, Kalapramanam& Voice culture 2. 4,5. By learning kritis, attain knowledge to develop Raga Alapana
9.	18BMUC09	Violin/ Veena-AbhyasaGanam-Practical –III	1. 1,2&3. Gain Knowledge to differentiate the playing technique of Svara&Sahitya 2. 4&5. To develop the skill to play notes in different octaves and to learn music can excel without sahitya
10.	18BMUI03	Basics of Computer Applications in Music	1. Gain knowledge to Browse 2. Attain knowledge to utilize Tamil Software 3. Gain knowledge to utilize different devices for music

			4. Equip and gain knowledge about different musical software 5. Gain practical knowledge to extract music through computer.
11.	18BMUC10	Biography of Musicians	1. Understand the life of various composers 2. Acquire knowledge about the divine miracle happened in life of composers 3. Attain knowledge about various patterns of compositions 4. Knowledge about the ShishyaParamparas and tribute to their Gurus 5. Gain knowledge about how far the compositions of different composers are in vogue
12.	18BMUC11	Tamil Composers-Practical	1. Understand the compositional types of various composers 2. Acquire knowledge about the divinity of composers 3. Attain knowledge about various patterns of compositions 4. Knowledge about the sahithya bhava 5. Attain knowledge about how far the compositions of different composers are in vogue
13.	18BMUC12	Sabha Ganam-Vocal Practical - II	1. 1,2 . First and foremost musical form helps to develop 2. svaragnanam, Talagnanam, Kalapramanam& a. Voice culture 3. 3, 4&5.By learning kritis, attain knowledge to develop Raga Alapana
14.	18BMUC13	Great Composers-Practical - I	1. Gain knowledge in detail about specific deities and descriptions 2. Attain knowledge in nuances, permutations and combinations of Swaras and subtle Gamakas 3. Understand different varieties or types of Bhakthi 4. Rhetorical beauties have been gained 5. Gain knowledge on different set of Group Kritis
15.	18BMUC14	Violin/ Veena Abhyasa Ganam Practical- IV	1. Gain knowledge to play the subtle Gamakas 2. Fingering techniques are gained 3. Swarajnana and SwaraSthana are gained 4. Ability to gain Talagnana 5. Ability to play small pieces of composition
16.	18BMUC15	Musicology II	1. Obtain knowledge that music is part and parcel of Temple rituals 2. Gain knowledge about how the climatic conditions of a place affect the music of that particular area.Obtain idea about the music of Western Countries 3. Gain intervals, frequencies of svaras and the calculations are eye opener that music has so

			much of permutations and combinations which are mathematically oriented 4. The rules to be adopted by the performer and by the audience and also the selection of compositions according to selective audience 5. Music is an ocean which comprise innovative ideas, developments, inventions and so on and how these are attained
17.	18BMUC16	History of Indian Music	1. Acquire knowledge about the evolution of scales from which modern ragas are evolved 2. Students could understand the music related works of ancient period 3. Gain musical information from the inscriptions of old times 4. Students could understand the relevance of great composers, performance in music festivals, musical sculptures etc of particular place related to music 5. Could obtain specific details of music related facts of prominent places
18.	18BMUC17	Sabha Ganam-Vocal Practical-III	1. Understand the compositional types of various composers 2. Acquire knowledge about the divinity of composers 3. Attain knowledge about various patterns of compositions 4. Knowledge about the sahithya bhava 5. Attain knowledge about how far the compositions of different composers are in vogue
19.	18BMUC18	Sabha Ganam-Vocal Practical-IV	1. Understand the compositional types of various composers 2. Acquire knowledge about the divinity of composers 3. Attain knowledge about various patterns of compositions 4. Knowledge about the sahithya bhava 5. Attain knowledge about how far the compositions of different composers are in vogue
20.	18BMUC19	Compositions of different Eminent Composers Practical-(Self study course)	1. Understand the compositional types of various composers 2. Acquire knowledge about the divinity of composers 3. Attain knowledge about various patterns of compositions 4. Knowledge about the sahithya bhava 5. Attain knowledge about how far the compositions of different composers are in vogue

21.	18BMUC20	Violin / Veena Sabha Ganam Practical V	1. Gain knowledge to play the subtle Gamakas 2. Fingering techniques are gained 3. Swarajnana and SwaraSthana are gained 4. Ability to gain TalaJnana 5. Ability to play small pieces of composition
22.	18BMUC21	Music (Computer Based Test)	1. Gain knowledge to attend objective type of questions 2. Student gain knowledge to practice online examination 3. Students get General awareness about music 4. Getting knowledge to answer quickly. 5. Obtain awareness about their knowledge in the subject.
23.	18BMUC22	Project	1. Presentation skill could be developed by doing project work 2. Students get opportunity to present their ideas & views related to their research 3. Students will be made prepared for further research studies 4. Project is a stepping stone for future research works 5. Project being part of the curriculum will enhance the confidence of the students
24.	18BMUO01	Generic Elective Course-PenmaiyumBharathiyamum – Practical	1. Gain knowledge about the musical and lyrical values of Bharathiar composition 2. Got awareness about the women empowerment 3. Gain knowledge about Bharathiar as a poet 4. Acquire knowledge about how Patriotic Songs are important for National Integraton 5. Obtain understanding about Bharathiar as a musician.
25.	18BMUC23	Musical Instruments	1. Students would learn and understand various types of instruments such as stringed, wind, percussion and its construction 2. Percussion instruments are the main class of accompaniments used in vocal music and the students obtain knowledge about the part played by the percussion instruments in applied music 3. Ragas being the central point of our music, knowing about various kinds of ragas are more essential and the students will get good understanding about different kinds of ragas 4. Students learn learn details about different kinds of ragas used in concerts 5. Students would learn about the role of Melakartha Ragas in Carnatic Music
26.	18BMUC24	Sabha Ganam-Vocal Practical V	1. Understand various ragas and the compositions 2. Acquire knowledge about the ragas and composers' in-depth knowledge

			3. Attain knowledge about various patterns of compositions 4. Knowledge about the sahithya bhava 5. Attain knowledge about how far the compositions of different composers have varieties of raga sancharas
27.	18BMUC25	ManodharmaSangeetham-Practical	1. Understand various ragas 2. Acquire knowledge about the ragas and how to render the specific raga 3. Attain knowledge about various sancharasof raga 4. Knowledge about the raga bhava 5. Attain knowledge about their skill and ability to render that particular raga
28.	18BMUC26	Concert-Practical	1. Students get awareness about the basic principles to be followed in a performance 2. To give a performance, the main part is the selection of composition. Students acquire knowledge in selection of composition according to audience. 3. To give best performance, it is important to listen to the concerts of prominent musicians and each student could get basic understanding through listening good music 4. Students would be aware in the selection of songs which include different ragas, talas and languages 5. Students acquire knowledge about importance of performance and various rules to be followed while giving a performance
29.	18BMUC27	Great Composers-Practical II	1. By learning Group Kritis of Tyagaraja, students achieve knowledge about simple language used by him 2. Tyagaraja conveys his ideas through simple lyrics but great music and that can be understood by the students 3. By learning Dikshitar compositions, students could analyze the depth of ragas in Carnatic Music 4. Students would realise vast knowledge of SyamaSasthrigal by learning his svarajathis 5. SvathiTirunal was a real king in Music and it can be understood by learning his compositions
30.	18BMUC28	Violin/ Veena Sabha Ganam Practical VI	1. Gain knowledge to play the subtle Gamakas 2. Fingering techniques are gained 3. Swarajnana and SwaraSthana are gained 4. Ability to gain TalaJnana 5. Ability to play small pieces of composition
31.	18BTM104/	Discipline	1. Obtain knowledge about the relevance of ancient

	18BFHI04	Specific Elective Course Tamil Isai	Tamil composers in Carnatic music. 2. Achieve knowledge about different aspects of Tamil music which comprise sacred literature, knowledge of Talas and so on. 3. By learning sacred musical form students come to know about the first musical compositions I the history of music. 4. Learning the compositions of modern composers, students could understand and differentiate the different styles of both ancient and modern composers 5. By learning different types of musical forms, students would expertise in different ragas and talas.
32.	18BMUV01	Basics of Keyboard-Practical (Value added course)	1. Since it is a Major Instrument used in Western Music, students acquire basic idea about keys 2. Fingering techniques of Key Board can be understood by the students 3. Students would be familiar with the basic scales of Western Music 4. Students can identify the frequency of notes 5. Students would be aware of octave transposition in Western Music

M.A Music			
S. No	Course Code	Title of the Course	Course Outcome
1.	17MMUC01	Theory of Indian Music –I	1. Understand how the trinities have handled the rare ragas in their kritis 2. Improved experience in analysing live concerts of eminent musicians 3. Obtain thorough knowledge in basic Raga Scheme of Karnatic Music 4. Become aware of ancient mela schemes and different mela nomenclature 5. Get information about the musical references in Vedas, Puranas, Epics etc
2.	17MMUC02	Biography-I	1. Students get information regarding the music and other details of ancient musicians 2. Attain knowledge about the musicians who were exponent in particular type of musical form 3. Students could analyse different schools of music by way of learning about musicians 4. Gather details among the disciples of prominent musicians

			5. Get knowledge about the music of different periods through the composers of related periods
3.	17MMUC03	History of Indian Music-I	1. Gain musical information from the inscription of Pallava and Chola period 2. Students get knowledge about the ancient instrument 3. Awareness gained by students that music is very much connected with temples from ancient times 4. Gain knowledge that obsolete Instruments like Yazh and its varieties, which paved way for the present day instrument Veena. 5. Obtain knowledge about how music is used in other Art forms like dance drama
4.	17MMUC04	Concert Forms-Theory	1. Students become prepared for learning further compositions 2. Obtain detailed knowledge of raga, tempo of compositions, different elements of compositions etc. 3. Students become prepared for performance by learning different musical forms (which) include lighter forms 4. The rules to be adopted by the performer and the audience and also the selection of musical forms according to the audience 5. Students get informed by the evolution of concert and different steps to be followed while giving performance.
5.	17MMUC05	KalpithaSangeetha -Practical-I	1. Students get more knowledge about Tala and Raga as Adatala Varna is included in both abhyasagana as well as sabhagana 2. Learning group kritis is important since students become more powerful in practical knowledge. 3. As an opera, it is relevant that students attain knowledge in different kinds of musical forms used in it. 4. Attain knowledge about particular kind of Tala , especially which are not used nowadays. 5. Since, Thiruppugazh is one of the important works of ancient times, which portrays peculiar Tala patterns, students get aware of the same.
6.	17MMUC06	Compositions of Tamil Composers - Practical-II	1. Students become familiar with the tamil composition. 2. Develop intrinsic knowledge about tamil composers. 3. Obtain information about different styles of composers. 4. Get knowledge about the rhetorical beauties and other embellishments used in compositions. 5. Become exponent in old Tala patterns and their

			rendering.
7.	17MMUC07	History of Indian Music-II	1. The students attain knowledge about various sources of Musical History 2. Acquire knowledge about various classification of ragas 3. Obtain information regarding different musical phenomenon 4. Students come to know how the musical forms are evolved through different periods 5. Develop knowledge about different forms of sacred music.
8.	17MMUC08	Research Methodology in Music (Theory)	1. Students could know about what is meant by research and its related issues. 2. Acquire knowledge about synopsis, its definition and importance. 3. Knowledge about different ways of data collection, observation and so on. 4. Knowledge about the importance of Manuscripts, Books, Journals etc. in research. 5. Gather knowledge about the primary and secondary sources of research and their importance.
9.	17MMUC09	Operas and Dance dramas	1. Students will acquire knowledge about the compositions of medieval period. 2. Obtain knowledge about the style and content of music in operas of GopalakrishnaBharati. 3. Knowledge about the music used by Tygaraja in his operas and how it is different from his Kritis. 4. Gain knowledge about the relevance of music in dance dramas. 5. Understanding about Musical forms, raga, talasetc used in the work of SankaradasSwamigal.
10.	17MMUC10	NadopasanaKritis of Tyagaraja-Practical-III	1. Since, Nada which is the primordial concept of music, students learn about the greatness of Nada through the compositions of Tyagaraja 2. Students get knowledge about different voice registers, the ‘sthanas’ from where the sapthaswaras are produced 3. The musical and lyrical excellence of Tyagaraja could be analysed by this learning of compositions 4. The beautiful rendering of Shankarabharana raga in vilambitalaya is revealed by Tyagaraja& students would understand the power of music. 5. Students come to know how Thyagaraja succeeded in conveying the greatness of music through simple rendering by using simple language.
11.	17MMUC11	Musical	1. Learning adathalavarnas make the students

		Compositions - Practical- IV	thorough in subject. 2. Three swarajathis of Syamasasthri are the priceless gems of Carnatic music and the understanding of the same is very relevant to a music student. 3. Ghanaragapancharatna, being the most popular composition of Tyagaraja, students get authentic knowledge in the realm of performance. 4. Learning Group kritis is part of practical expertisation. 5. By learning the compositions of modern composers, students could differentiate the composition of both old and modern times.
12.	17MMUC12	Mini Project	1. Presentation skill could be developed by doing project work 2. Students get opportunity to present their ideas & views related to their research 3. Students will be made prepared for further research studies 4. Project is a stepping stone for future research works 5. Project being part of the curriculum will enhance the confidence of the student
13.	17MMUI01	Inter disciplinary Course	1. Familiarize the students with music of different languages. 2. The songs of Tevaram are relevant as these are the oldest musical forms in Carnatic music. 3. Learning patriotic songs of Bharatiar is very important for a music student as they are very popular. 4. Familiarize with the patriotic songs in other languages. 5. Familiarise with works of Tyagaraja and Purandaradas, the authentic musicians who created lot of Keerthanas which are asset to our music.
14.	17MMUC13	Musicology	1. Students get to know about the role of the ear in the human body and its other allied information 2. Improved knowledge about the organs that take part in the sound producing system of human body 3. Knowledge about the contribution of Tanjore Quartet in the realm of Carnatic Music 4. Knowledge about the prominence of Music in Dance can be improved by learning about music in dance forms 5. Knowledge about the importance of Music in the popular art forms of other States.
15.	17MMUC14	Ragalakshanam	1. Students will have thorough knowledge and understanding about details of each Raga

			2. Students will acquire knowledge about the classification of Ragas through analysinglakshana of each Raga 3. Raga Lakshana will aid the students to utilise it in framing different sancharas while singing Alapana 4. Students acquire knowledge about Major and Minor Ragas 5. Carnatic Music is Raga oriented and the students will be aware of the importance of Raga in Music
16.	17MMUC15	Lakshanagranda (open book course)	1. Natyasastra is the first authentic work that had mentioned about Music and hence the students will acquire knowledge about the Music of that Period 2. Students can analyse and understand the Music after the period of Natysasthra 3. Students will get knowledge about the Musical Instruments and their classification in the later medieval period 4. Students acquire knowledge about different Musical forms of 12th Century 5. Students will have the opportunity to know about ChathurdandiPrakashika which is the most important LakshanaGrandha in Carnatic Music
17.	17MMUC16	Theory of Indian Music - II	1. Students able to know the decorating angles commonly used in compositions 2. Carnatic Music consists of numerous variety of Talas. This will enable the students learn in-depth intricate tala system and its different aspects 3. Lakshanagrandhas are the main source of history and the students will get the knowledge about the music of different periods by learingLakshanaGrandhas 4. By learning Group Kritis the students add quantity of their knowledge base 5. Knowing various system of music is very essential for the students
18.	17MMUC17	ManodharmaSangeetha-Practical-V	1. Students will have thorough knowledge and understanding about details of each Raga 2. Students will acquire knowledge about the classification of Ragas through analysinglakshana of each Raga 3. Raga Lakshana will aid the students to utilise it in framing different sancharas while singing Alapana 4. Students acquire knowledge about Major and Minor Ragas 5. Carnatic Music is Raga oriented and the students

			will be aware of the importance of Raga in Music
19.	17MMUC18	Tamil Composition (Self study) Practical -VI	1. Obtain knowledge about the relevance of ancient Tamil composers in Carnatic music. 2. Achieve knowledge about different aspects of Tamil music which comprise sacred literature, knowledge of Talas and so on. 3. By learning sacred musical form students come to know about the first musical compositions I the history of music. 4. Learning the compositions of modern composers, students could understand and differentiate the different styles of both ancient and modern composers 5. By learning different types of musical forms, students would expertise in different ragas and talas.
20.	17MMUI019	Musical Compositions-Practical -VII	1. Learning Kritis in Major Ragas would add to the Musical Knowledge of the Students 2. Enable students to learn Compositions in Melakartha Ragas. It is highly important for the students as it is the most important part of Carnatic Music 3. Students would learn that Minor Ragas do have great influence in Carnatic Music 4. Students by learning minor ragas of various kinds would realize that ragas are the main element of Carnatic Music 5. Students would be able to understand that each type of raga has its own individuality
21.	17MMUM01	Multi disciplinary Course	1. Students get information regarding the music and other details of ancient musicians 2. Attain knowledge about the musicians who were exponent in particular type of musical form 3. Students could analyse different schools of music by way of learning about musicians 4. Gather details among the disciples of prominent musicians 5. Get knowledge about the music of different periods through the composers of related periods
22.	17MMUC20	Internship	1. Internship enables the students to practice what all they studied, in real time. 2. The students could improve self confidence and develop their career. 3. The students become more confident to cure their defects that reveal during their internship. 4. Acquired knowledge to develop the theoretical and practical aspects learned in the subject. 5. Obtain knowledge to develop the career.

23.	17MMUC21	Hindusthani Music and its Musical Forms	1. &2. Acquired knowledge about different musical forms of Hindustani music 2. The students could improve their knowledge by comparing different ragas of both the systems 3. Acquired knowledge to develop the theoretical awareness of evolution of Hindustani music. 4. Students would be able to understand the different Ragas in Hindustani music.
24.	17MMUC22	Thesis	1. Presentation skill could be developed by doing project work 2. Students get opportunity to present their ideas & views related to their research 3. Students will be made prepared for further research studies 4. Project is a stepping stone for future research works 5. Project being part of the curriculum will enhance the confidence of the students.

M. Phil / Ph.D			
S. No	Course Code	Title of the Course	Course Outcome
1.	18MPMU01/ 18MPHMU01	Research Methodology	1. Students could know about what is meant by research and its related issues. 2. Acquire knowledge about synopsis, its definition and importance. 3. Knowledge about different ways of data collection, observation and so on. 4. Knowledge about the importance of Manuscripts, Books, Journals etc. in research. 5. Gather knowledge about the primary and secondary sources of research and their importance
2.	18MPMU02/ 18PHMU02	Advanced Paper	1. Students could know about the history of South Indian Musical sources. 2. Acquire knowledge about the inevitable role of Mass media and to utilize them in a proper manner. 3. Knowledge about different ragas and their therapeutic benefits. 4. Knowledge about the importance of Ethnomusicology. 5. Gather knowledge about the methods, evaluation used in music text and aids for teaching Music in schools and in colleges.
3.	18PHMU03A	Seventy two Asampurna Mela	1. Students could know about the history and origin of Asampurna Mela Paddhathi

		Paddhathi – Scheme and its characteristic features	2. Acquire knowledge about the utility of Asampurna Mela Paddhathi 3. Knowledge about the importance of Sampurna Mela Paddhathi. 4. Acquire in depth knowledge of both the Mela Paddhathis 5. Equip knowledge about the ragas handled by Dikshitar in Asampurna Mela Paddhathi
4.	18MPMU03A	Mohana Raga	1. Students could know about the history of Mohana Raga. 2. Acquire knowledge about the utility of Audava ragas. 3. Knowledge about the Mohana raga handled in different musical forms. 4. Acquire in depth knowledge about the raga handled by Seergazhi Moovar and Trinities 5. Equip knowledge about the popularity of Mohana raga in film music.

Department of Psychology

B. Sc Psychology			
S. No	Course Code	Title of the Course	Course Outcome
5.	18 BPSC 01	Introduction to Psychology	6. Identify the nature, methods, disciplines and schools of psychology 7. Delineate and analyze the sensory processes. 8. Describe the process and aspects of perception. 9. Identify the different motives and the theories behind motivation 10. Analyze the physiology of emotions and its theories
6.	18 BPSC 02	Physiological Psychology	1. Delineate about nature and branches of Physiological Psychology and neuroimagery techniques 2. Outline the structure and functions of nervous system 3. Analyze the significance of neurons and neuro transmitters 4. Evaluate the significant functions of the hormones and its influence in human behaviour 5. Illustrate the biology of Emotions, Learning and Motivation
7.		Psychological Experiments I	1. Measure perception and illusion, its types and methods to find it and its practical effects 2. Judge the Illusion regarding weights and its applications 3. Predict attention span, division of attention and its various types, its importance in daily life and related disorders and measures to find deficiency 4. Analyze the concepts of motivation and evaluate the ways to measure it and also its impact in achievement 5. Assess association, implications of free and emotional association in counselling and learning with association
8.	18 BPSC 03	Cognitive Processes	1. Delineate about thinking, problem solving and its types 2. List the various theories and approaches of learning 3. Identify and classify the aspects of

			memory and forgetting 4. Analyze the nature, theories and assessment of intelligence. 5. Evaluate the nature and theories of personality
9.	18 BPSC 04	Developmental Psychology	1. Knowing the concepts of Developmental Changes 2. Understanding the significance of Prenatal Period and Infancy 3. Knowledge about Babyhood and its Characteristics 4. Knowing the significance of Early Childhood and its hazards 5. Understanding the characteristics of Late Childhood and also the Personality Changes
10.	18 BPSC 05	Psychological Experiments I	1. Knowing the concepts of Developmental Changes 2. Understanding the significance of Prenatal period and Infancy 3. Knowledge about Babyhood and its characteristics 4. Knowing the significance of Early childhood and its hazards 5. Understanding the characteristics of Late Childhood and also the Personality Changes
11.	18 BPSC 06	Social Psychology	1. Employ Social Psychology perspectives and apply factors affecting social behaviours 2. Examine the impact of non verbal communication and Impression Management in social perception and in attribution 3. Analyze the aspects of social cognition and social identity 4. Practice forming attitudes and aware of persuasion and Cognitive Dissonance 5. Report various aspects of Social Identity
12.	18 BPSC 07	Human Development	1. Predict the various stages and difficulties in puberty and adolescence 2. Recognize and apply personal and social adjustments in early adulthood 3. Inspect vocational and family adjustments in early adulthood 4. Measure challenges in middle age of life

			span 5. Attach adjustments necessary in old age
13.		Psychological Experiments II	1. Measure self concept, self esteem and assertiveness 2. Examine self awareness scales including insecurity and inferiority 3. Predict attitude and superstitious attitude using scales 4. Analyze social interest and social maturity using measuring tools 5. Sketch adolescents self perception
14.	18 BPSI 03	Computer Applications in Psychology	1. Understand and recall the basic concepts of MS word 2. Apply the basic concepts in student's assignments and projects 3. Recall and remember the basics of MS Excel and also to analyze and understand it properly 4. Analyze and apply the pictorial designs in student's assignments 5. Understand the basic concepts in power point programmes and also to learn how to work with different power point programmes
15.	18 BPSC 08	Psychology and Social Issues	1. Summarize and analyze the definition, nature and origins of Stereotyping, Prejudice and Discrimination 2. Recall and compare the relationships, marriage and interdependent relations 3. Outline conformity and its factors 4. Recognize aggression and evaluate its causes and prevention 5. Analyze and apply the group formations and decision making in daily lives
16.	18 BPSC 09	Positive Psychology	1. Outline the history and approaches of Positive Psychology 2. Analyze the prevention and evidence based treatment approaches of Positive Psychology 3. Summarize and relate the concepts and techniques employed in stress reduction 4. Delineate the theories of Positive Psychology and its implications 5. Appraise the relationship quality, emotional well being and its assumptions
17.	18 BPSC 10	Foundations of	1. Understand the Types of Research, Kinds

		Behavioural Research	of Review of Literature, Identification of Problem and Formulation of Hypotheses 2. Analyze the various kinds of Research Design to apply for the Research work 3. Identify the various methods of data collection to use the best method to apply for the Research Purpose 4. Analyze the various methods of sampling and how to use it effectively 5. Construct report writing and dissertation
18.	18 BPSC 11	Psychological Experiments II	1. Measure Interpersonal Relationship, Decision Making, Locus of Control, Well Being and Intelligence 2. Examine the Children's Intelligence 3. Predict Locus of Control and its effects 4. Analyze the well being and give individual counselling 5. Assess social maturity
19.	18 BPSC 12	Abnormal Psychology I	1. Define and classify Abnormal Behaviour and its causal factors 2. Identify and assess the stress, coping and adjustment disorders 3. Classify and identify the various disorders related to bodily dysfunctions and preoccupation 4. Describe and analyze the various forms of anxiety disorders 5. Delineate and recognize the different personality disorder
20.	18 BPSC 13	Organizational Behaviour	1. Describe the foundations of Organizational Behaviour 2. Compose effective group in an organization 3. Apply the significance of leadership and motivation 4. Identify effective teams and power in an organization 5. Prepare training programmes and manage stress at work place
21.	18 BPSC 14	Psychology of Rehabilitation	1. Delineate the concept, history the types of disabilities and the various kinds of rehabilitation 2. Label and analyze neurotic, affective and cases with conduct disorder 3. Recognize the effects of brain injury in children and adults and practice retraining supports for families and schools 4. Classify and apply the prevention and

			treatments for the alcohol and drug abuse together with rehabilitation of substance abusers 5. Identify the role of family and social network in rehabilitation and evaluate preventing measures for relapse
22.	18 BPSC 15	Statistics in Psychology	1. Delineate the importance and functions of statistics, frequency distribution and ways of measuring series 2. Recognize graphic representation of frequency distribution 3. Evaluate the uses of Measures of Central Tendency and Variability 4. Analyze and evaluate the Scattergram and Rank Order Correlation 5. Identify the significance of mean, difference between two correlate mean and chi-square
23.		Psychological Experiments - III	1. Measure stress using various standardized tests 2. Identify anxiety using various standardized test 3. Measure Depression using standardized tools 4. Assess the level of anger and aggression using scales 5. Assessing the eating disorder
24.	18 BPSC 16	Emotional Culturing	1. Delineate the definition, physiology of emotion, brain and emotion and coping strategies of stress 2. Compare and classify various theories of emotion 3. Define and indicate emotional intelligence and theories of intelligence 4. Examine model of attraction, components and effects of interpersonal relationships on mental health and happiness 5. Practice emotional intelligence by managing negative and positive emotions and components of body language
25.	18 BPSC 18	Project	**1.** Apply the concepts of research and its methodologies, identify appropriate research topics **2.** Practice, select and define appropriate research problem and parameters **3.** Compose a project proposal **4.** Organize and conduct research **5.** Write A Project Report With Good APA Style For Scholarly Writing

26.	18 BPSC 19	Abnormal Psychology II	**1.** Label and identify the mood disorders and its treatment **2.** Outline and analyze the psychotic disorders and Schizophrenia **3.** Classify and identify the cognitive impairment disorders **4.** Identify and differentiate the disorders related to substance use **5.** Delineate and recognize the developmental disorders
27.	18 BPSC 20	Health Psychology	**1.** Delineate the definition, physiology of emotion, brain and emotion and coping strategies of stress **2.** Compare and classify various theories of emotion **3.** Define and specify emotional intelligence and theories of intelligence **4.** Examine model of attraction, components and Effects of interpersonal relationships on mental health and happiness **5.** Practice emotional intelligence by managing negative and positive emotions and components of body language
28.	18 BPSC 21	Counselling Psychology	1. Delineate the goals, Outcomes and process of counselling and also explain the various stages involved in counselling 2. Predict counselling relationships and identify the core conditions involved in counselling 3. Formulate assessment and diagnostic procedures in counselling and construct techniques to improve counselling 4. Classify and appraise various psychological theories in counselling 5. Designs counselling for children and women, additionally evaluate techniques to work with parents and children and also working with older adults
29.	18 BPSC 22	Learning Disabilities	**1.** Label and summarize the types of difficulties in learning and its causes **2.** Analyze and identify the disorders related to oral expression, reading and writing **3.** Recognize the learning difficulties involved in mathematical concepts and design remedial tools **4.** Identify the role of social support; assess the type of disability of the individual and construct remedial tools, intervention accordingly **5.** Summarize the learning difficulties

			involved in adolescent and adults and design interventional programmes for learning disabled persons
30.	18 BPSC 23	Human Resource Management	**1.** Understanding and analyzing general concepts in the HRM field **2.** To define, identify the job analysis methods and also to specify its Outcomes in Human Resource Planning **3.** To Review, restate or label the functions and procedures of Recruitment and Selection **4.** To understand and specify the basic concepts of placement, induction and internal mobility **5.** To define, describe the objectives and principles of incentives and salary process
31.	18 BPSC 24	Psychological Experiments III	1. Measure intelligence and its theories and methods to interpret 2. Identifying the Personality type and evaluate the way to assess 3. The students reveal about the unconscious wants, needs, desires and wishes 4. Analyze the brain dominance and understanding the hemispheres 5. Assess the Vocational Preference and need to get guidance to identify the interest
32.	18BPSO01	Behaviour Modification Generic Elective	1. Delineate the concept and basis of behavioural approach. 2. Apply and analyze the various operant behaviour techniques 3. Recognize the various social learning methods. 4. Understand and analyze the developmental stages of modelling and self efficacy 5. Apply and evaluate the different behaviour techniques
33.	18BPSV01	Life Coaching Skills Value Added Course	1. Understand the meaning of Life skills 2. Apply and analyze various skills associated with goal setting 3. Recognize the importance of relationship skills 4. Delineate the Occupational and Presentation Skills 5. Evaluate the significance of Health

			enhancing behaviours
34.	18BIDI02/18BRDI02/18BFHI04/ 18BENI04/18BFDI04/18BMUI02	Personality Development DSE	**1.** Delineate the definition of personality, types, theories, techniques and improving measures of personality **2.** Classify the types of attitudes and various communication styles including the types and barriers **3.** Apprise self management, self esteem and stress management techniques **4.** Practice types of thinking and problem solving strategies **5.** Identify types of body language, facial expressions and kinesthetic expressions

M. Sc Applied Psychology			
S. No	Course Code	Title of the Course	Course Outcome
1.	17 MAPC01	Theories and Systems of Psychology	1. Delineate the early explanations of Greek Philosophy. 2. Recognize the emergence of British tradition and Modern Psychology 3. Outline the twentieth century system of Psychology 4. Debate about the European Philosophical background and its major proponents 5. Apply contemporary trends in Psychology
2.	17 MAPC02	Physiology of Behaviour	1. Delineate the structure and function of neurons 2. Identify the importance of Neurotransmitters and Neuro modulators. 3. Outline the structure of nervous system and the types of brain imaging. 4. Summarize the various sensory process of brain 5. Analyze and evaluate the mechanism of sleep and its disorders
3.	17 MAPC03	Applied Cognitive Psychology	1. Recall the theoretical approaches of cognitive neurosciences. 2. Recognize the various concepts of attention and memory. 3. Describe the process, acquisition and neuropsychology of language and development. 4. Analyze the aspects of problem solving and

			decision making. 5. Assess the structures, approaches of intelligence and strategies to improve intelligence
4.	17 MAPC04	Psychopathology - I	1. Interpret diagnose and classify Psychiatry and know about collection of case history. 2. Categorize the components and classification of assessments 3. Discuss stress disorders and its effects with the prevention and treatment. 4. 4.Analyze the conditions of Somatoform and dissociative disorder on the bases of ICD 10 and DSM IV 5. 5.Appraise eating disorders and its treatment
5.	17 MAPC05	Practicum and Assessment	1. Demonstrate various scales of intelligence and its domain 2. Analyze and distinguish the types and traits of personality 3. Apply cognitive abilities 4. Examine the importance of social relations and its distinctions. 5. Analyze and categorize mental dispositions using scales.
6.	**17MAPC06**	Personality Theories	1. Delineate and discuss the major concepts and evaluations of Psychodynamic Theories 2. Define and analyze Trait theories, approaches, dimensions and assessment 3. Describe and evaluate the major concepts, evaluations and dimensions of behavioural theories 4. Delineate and explain the major concepts, evaluations and dimension of Psychodynamic Theories 5. Analyze the Advances in Personality Theory
7.	**17 MAPC07**	Psychotherapy	1. Describe counselling and its implication 2. Illustrate the psychodynamic theories involved in counselling 3. Analyze the significance of Existential and Humanistic approaches in counselling 4. Appraise various behavioural therapies 5. Discuss about the contemporary approaches of psychotherapy
6.	**17 MAPC08**	Psychopathology - II	1. Describe the disorders related to sexual dysfunction 2. Categorize the various stages of Substance Abuse disorders 3. Analyze and differentiate Schizophrenia and other Psychotic disorder 4. Classify the about the different types of Cognitive disorders

			5. Evaluate Personality, Anxiety and Mood disorders
7.	**17 MAPC09**	Experimental Design in Research	1. Explain the methods and function of research 2. Classify sampling, hypotheses testing and statistical inference 3. Solve Variance and its components 4. Classify various Research Designs 5. Apply the types of research and psychometric properties
8.	**17 MAPC10**	Psychodiagnostic Methods	1. Apply the psychological assessment for children 2. Practice the various psychological assessments for children with special needs 3. Appraise the psychological assessment for parents, teachers and caregivers 4. Analyze the assessments for cognitive abilities 5. Evaluate the assessments of memory and Brain Dysfunction
9.	**17 MAPC11**	Mini Project	1. Apply the concepts of research and its methodologies to identify appropriate research topics 2. Practice select and define appropriate research problem and parameters 3. Compose a project proposal 4. Organize and conduct research 5. Write a project report with good APA style for scholarly writing
10.	**17 MAPC12**	Applied Social Psychology	1. Delineate and apply the role of human values and Introduction to Clinical and Counselling Psychology and treatment 2. Outline and the concepts of Health including coping with stress and Education Psychology 3. Describe and analyze the criminal justice system, goals and rehabilitations of prison approaches and effects of media. 4. Analyze personal relationships and classroom relations 5. Assess the positive well being and benefits of optimism
11.	**17 MAPC13**	Advanced Life Span Development	1. Delineate and identify cognitive development, its classic approaches and psychosocial and developmental issues 2. Identify and assess the development and approaches of early and middle childhood 3. Understand the physical and mental health and evaluate the educational and vocational

			issues 4. Analyze the emotional and personality development of middle adulthood and understand the midlife crisis 5. Identify the psychological issues and assess the Stability and Personality Traits of Old Age
12.	**17 MAPC14**	Counselling Psychology	1. Identify the attitudes of a professional counsellor, values in counselling and understand the stages of counselling 2. Develop educational, career and workplace counselling and formulate work place counselling. 3. Understand the physical and mental health and evaluate the educational and vocational issues 4. Analyze the emotional and personality development of middle adulthood and understand the midlife crisis 5. Recognize and assess and the meaning, psychological issues and Stability of Personality Traits of old age
13.	**17 MAPC15**	Health Psychology	1. Specify the role of health psychology, research methods and psychological factors in illness and disease 2. Classify the types of preventions, the process of illness and various symptoms 3. Recognize the various concepts of stress, coping process and the management of stress 4. Discuss the range of chronic illness and disability among the children, adults and aged 5. Examine women's health, healthy aging and genetics
14.	**17 MAPC16**	Psychological Measures and Statistics	1. Delineate the Classification and Dispersion and Skewness 2. Analyze the various types of correlation 3. Recognize and apply the various testing's of hypothesis 4. Analyse and evaluate the Non Parametric Test 5. Understand and apply SPSS in Psychology
15.	**17 MAPC17**	Human Resource Management	1. Understanding and analyzing general concepts and strategies in the HRM field 2. Define, identify the job analysis methods and also to specify its outcomes in Human Resource Planning and understand employee testing selection 3. Review Training and Introduction to

			Orienting and Development of Training Employees 4. Evaluate basic factors in determining Pay Rates, incentive pay terminology and compensations 5. Assess employee relations and work place health hazards
16.	**17 MAPC18**	Sports Psychology (Self Study)	1. Define the Practice of Sports and Performance Psychology 2. Identify the Elements of Sports Psychology and assess motivation and participation 3. Evaluate Peer Relationships in Physical Activity and the psychological aspect of sports person. 4. Assess the Mindfulness and Intention Behavioural Relationship 5. Indicate and assess the Attribution in Sports Psychology
17.	**17 MAPC19**	Internship	1. Apply counselling process, techniques, and significant therapies in the relevant domains 2. Formulate enhanced counselling programmes 3. Write a internship report
18.	**17 MAPC20A**	Open Book (Elective - Anyone) Neuropsychology	1. Delineate the branches, historical back ground, conceptual issues and practice of neuropsychology 2. Explain and assess the anatomy of nervous system 3. Evaluate and indicate the neuro psychological assessment of frontal lobe functions and dysfunctions 4. Assess and evaluate specific functions and dysfunction of temporal lobe 5. Evaluate the neuro psychological examination of functions and dysfunctions of parietal lobe and occipital lobe
19.	**17 MAPC20B**	Organisational Behaviour	1. Delineate the human behaviour in organisations and apply application of knowledge and skills 2. Evaluate individual differences and organisational behaviour and major theories 3. Analyze stress and individual differences in Stress 4. Evaluate interpersonal processes and behaviour and decision making by individuals and groups 5. Understand the leadership and management and Conflicts and Negotiation
20.	**17 MAPC20C**	Counselling Skills	1. Delineate creating communication skills and feelings and evaluate counselling and

			helping relationships 2. Understand the Internal Frame of Reference and practice counselling and helping process 3. Assess feelings, physical reactions, communications and actions and identifying skills 4. Evaluate problem solving and coaching skills 5. Assess diversity in counselling and understand counselling theory and research
21.	**17 MAPC21**	Clinical Internship	1. Apply counselling process, techniques, and significant therapies in the relevant domains 2. Formulate enhanced counselling programmes 3. Write a internship report
22.	**17 MAPC22**	Thesis	1. Describe the research process and the principle activities, skills and ethics associated with the research process 2. Practice select and define appropriate research problem and parameters 3. Compose a project proposal 4. Organize and conduct research using various interventions 5. Write a project report with good APA style for scholarly writing.
23.	17 MAPI 01	Positive Psychology	1. Identify and classify positive emotions, measuring emotions and effects and obstacles of happiness 2. Delineate and evaluate Intrinsic Motivation, Meta Motivational States and Reversal Theory, Flow and its implication 3. Recognize and appraise the neurobiology of Hope, Optimism and Emotional Intelligence 4. Identify and classify Giftedness, Creativity and Wisdom 5. Predict and analyze Positive Traits, Motives and Self Efficacy
24.	17 MAPM 01	Emotional Intelligence	1. Delineate And Apply Emotional Intelligence 2. Identify The Relationship Between Emotional Intelligence And Personality 3. Evaluate The Emotional Skills Of Managers, Managing Emotional Upset And Enhancing Emotional Intelligence In Adulthood 4. Assess Giftedness, Creativity And Wisdom 5. Indicate And Assess Positive Traits, Motives And Self Efficacy

M.Phil/ Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPCP01/19PHCP01	Advanced Research Methodology in Psychology	1. To equip the Researcher about the types of research and different kinds of psychometric scales used in Research. 2. Enable the Researcher to choose appropriate Research Design for the research 3. Acquire the knowledge of Complex Research Design in Psychology. 4. To master the significance of qualitative research 5. The Scholar will be able to get hands on training in SPSS package and deal with the outcome of the analysis most effectively.
2.	19MPCP02/19PHCP02	Psychotherapy in Counselling	1. To understand the skills of Counsellor, Ethics and Stages of Counselling 2. To equip the Researcher to be knowledgeable in Psychotherapy 3. To train the Researcher in Modern Approaches in Counselling 4. To understand and practice Family and Couple Therapy 5. To understand the nature and dynamics of Groups and effectively deploy the same in Group Therapies

Department of Visual Communication

B. Sc Visual Communication			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BVCC01	Introduction to Visual Communication	1. Understand the communication process and its types. 2. Gain knowledge about the need for human and visual communication and its application. 3. Identify the fundamental elements of design. 4. Understand the basic principles of design. 5. Understand the creative process in development of ideas.
2.	18BVCC02	Communication Media	1. Understand the types of communication with special emphasis on mass communication. 2. Illustrate the growth of communication through print media. 3. Know the functioning of broadcast industry. 4. Gain knowledge about the film industry. 5. Recognise various facets of New Media.
3.	18BVCC03	Social Psychology	1. Understand the perspectives of Social Psychology. 2. Know the process of socialization at various stages of life. 3. Realise the importance of attitude and public opinion. 4. Identify the different types of Groups. 5. Ability to analyse audience behavior.
4.	18BVCC04	Visual Art (Practical 1)	1. Understand the basic perspectives behind day-to-day objects. 2. Visualize Design by application of geometry and application of colour. 3. Develop creative sense of design and typographical applications. 4. Conceptualise, sketch and make posters. 5. Render composition, proportion and perspective through practical

			training and studying great artists
5.	18BVC101	**Discipline Specific Elective –I** Basics of Computers	1. Able to work with the basic computer applications. 2. Able to create an excel worksheets with graphical representations. 3. Able to produce a presentation using multimedia content. 4. Analyze data queries and produce hyperlinks. 5. Interpret the nuances of new media.
6.	18BVCC05	Communication Theories	1. Infer the four theories of media 2. Understand the basic models of communication 3. Gain knowledge about the theories of communication 4. Apply the theories on uses and effects of mass media. 5. Analyze and measure the influence of media on the society.
7.	18BVCC06	Photography	1. Understand the basics of camera operation, types of cameras and lenses. 2. Understand lighting for photography, use of filters and flashes and principles of composition 3. Understand the qualities of film know the process of developing and printing of films 4. Gain an insight into digital still photography. 5. Know the basics of photo journalism and gain an insight into genres of photography.
8.	18BVCC07	Media, Society and Culture	1. Understand the mass media and its effects. 2. Distinguish different types of media audience. 3. Infer various media approaches. 4. Enumerate the need for cultural studies. 5. Articulate popular culture.
9.	18BVCC08	Photography (Practical - II)	1. Able to handle the digital camera and its features 2. Know the basic concepts in lighting. 3. Able to create and compose photographs.

			4. Able to create pictures for specific needs. 5. Know to do basic digital editing of photographs.
10.	18BVCC09	Advertising	1. Understand the basics of advertising. 2. Distinguish the different types of advertisements. 3. Understand the structure and functions of an advertising agency. 4. Perceive the creative stratergy of an advertising campaign. 5. 5. Interpret the do's and don'ts of advertising professionals.
11.	18BVCC10	Writing for Media	1. Improve the skills of writing. 2. Knowledge on the structure and writing news for print media. 3. Writing skills for radio programme formats 4. Writing skills for television programme formats 5. An imaginative faculty for creative writing.
12.	18BVCC11	Print Production	1. Know the principles of printing, types of printing processes and typesetting methods. 2. Understand the colour printing process. 3. Understand the importance of typography in printing and appreciate the value of communication through typography. 4. List out different types of paper, inks and preparation of plates for printing processes. Know elements in preparation of print order. 5. Know the technological developments in printing processes. Gain an overview of electronic publishing.
13.	18BVCC12	Graphic Design (Practical - III)	1. Understand elements and principles of design for print promotion and commercial gadgets. 2. Apply the design concepts and sketch for print promotion and commercial gadgets. 3. Learn the basics of digital soft ware in creating print promotion and

			commercial gadgets. 4. Apply the digital software for creating the print promotion and commercial gadgets. **5.** Create the print promotion and commercial gadgets for an event organised by the students and display their output.
14.	18BVCC13	Media Literacy (Practical - IV)	1. Compare and analyse the news features and advertisements in a newspaper 2. Able to understand media text for different audience 3. Analyse the content of radio programmes and commercials 4. Analyse the technical aspects of Television programmes and commercials 5. Analyse online media content and identify the elements in online websites
15.	18BVCI03	**Discipline Specific Elective –III** Introduction to Multimedia(Visual Communication)	1. Define the components of various multimedia tools. 2. Identify different types of font families used in multimedia platform. 3. Explore the technological characteristics of sound for a multimedia project. 4. Experiment with basic image processing. 5. Familiarize with the basic video broadcasting standards and formats.
16.	18BVCC14	Media Laws and Ethics	1. Understand the historical perspective of Indian constitution and the fundamental rights and duties 2. Identify the various cases of freedom of press, law of defamation 3. Figure out the various laws pertaining to media conduct. 4. Know the various laws governing the media. 5. Know about press commission and the various broadcasting laws.
17.	18BVCC15	Radio Production	1. Know the history of radio and the fundamentals of radio production.

			2. Gain an insight in to the various programme formats and its relevance. 3. Understand the stages in producing programmes for radio and evaluation of programmes. 4. Know the process of various recording techniques and usage of digital audio techniques. 5. Understand the postproduction process in radio production.
18.	18BVCC16	Television Production	1. Understand the basic concepts of television as a medium. 2. Get trained in television programme production and live recording. 3. Experience the types of lighting and sound production techniques. 4. Experiment the various editing techniques. 5. Identify the special effects used in editing.
19.	18BVCC17	Radio Production (Practical - V)	1. Understand the different types of radio programmes. 2. Able to prepare script for radio programmes. 3. Able to produce radio programmes based on the script. 4. Able to edit sound using Adobe Audition. 5. Create artificial sounds and sound dubbing.
20.	18BVCC18	Television Production (Practical - VI)	1. Understand the techniques of camera handling and audio video editing. 2. Distinguish different types of lights and its functions. 3. Able to analyse and create television commercials. 4. Able to demonstrate multicamera production. 5. Able to edit video programmes using Adobe Premier Pro.
21.	18BVCI04	**Discipline Specific Elective –IV** 2D & 3D Animation (Visual	1. Understand the history of animation and its types. 2. Knowledge on the techniques to create 2D animation 3. Familiarise the concept of 3D

		Communication)	animation and the techniques. 4. Apply motion capturing technique to a 3D character. 5. Analyse the production and post production aspects of 3D animation movies.
22.	18BVCC19	Online Media	1. Understand the new media concepts and the role of ICT. 2. Interpret the recent trends in new media. 3. Analyze the pros and cons of new media. 4. Excel the various types of writing that is required in new media. 5. Understand the development in mobile technologies.
23.	18BVCC20	Film Studies	1. Know the history of Indian Cinema. Understand the film characteristics and film language. 2. Be familiar with various stages of film production 3. Discern the importance of mise-en –scene and role of cinematography. 4. Be familiar with dimensions in film editing – visual editing and sound editing. 5. Know the concept of film forms – narrative and non-narrative, film genres and understand the sociology of audience.
24.	18BVCC21	Script Writing	1. Understand various genres of narration in communication media. 2. Cognize structural variations and enhance visual imagination through story board. 3. Through reading literature create story boards and scripts for fictions. 4. Analysing frames and scenes through sequential analysis. 5. Drafting script for one's own imaginative creation.
25.	18BVCC22	Public Relations	1. Define the basic elements of public relations and related terms. 2. Know the organizational structure of a PR agency. 3. Understand the different functions of a Public Relation Officer 4. List the stages in planning a PR campaign and analyse the cases 5. Evaluate the ethical considerations

			in public relations.
26.	18BVCC23	Set Designing (Practical - VII)	1. Will be able to visualize set design. 2. Familiarize with story boarding. 3. Understand the implement color psychology. 4. Design using software. 5. Able to create a set for events.
27.	18BVCC24	Webpage Designing (Practical - VIII)	1. Analyse the website contents 2. Able to create a web layout in Adobe Photoshop 3. Able to develop the web layout in Adobe Dreamweaver 4. Able to make link to html pages 5. Able to create flash files for a website
28.	18BVCC25	Event Management (Self Study course)	1. Gain knowledge about the historical perspectives of event management. 2. Understand the logistics of event management. 3. Manage tools and resources for event management. 4. Develop communication skills and understand the ethics of the event industry. 5. Plan for emergency with the knowledge of prior case studies in event management.
29.	18BVCC28	E-content development	**1.** Understanding e-content 2. Summarise creation of e-content modules. 3. Organise tools and understanding e-content models. 4. Knowledge about application of e-content for online media. 5. Interpret e-content market.
30.	18BVCC29	Media Management	1. Understand various strategies in media management. 2. Manage media with ethical responsibility 3. 3. Cognize ways in which media operates: Its economic strategies and content management. 4. Analyze of global media management perspectives. 5. Gain knowledge about media marketing and current trends in media business.
31.	18BVCC30	Magazine design and layout	1. Develop imagination over magazine cover designing.

			2. Training inIndesign and page making. 3. Visualize attractive page layouts. 4. Inculcate the capacity to choose one's own themes with researched contents. 5. Training in creating full fledged magazines, brochures and catalogues
32.	18BVCC31	Film Appreciation	1. Analysing different types of films. 2. Learning to appreciate various genres of films. 3. Understand the connection between film and society at various point of time. 4. Realise the importance of protagonist and social issues portrayed by films. **5.** Create Knowledge about films made in different countries and compare them with Indian Cinema.

School of Commerce and Management

Course Outcomes of Courses offered in UG/PG Programmes

Department of Commerce

B. Com			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BLE 001	English Language for Communication I	1. Build academic vocabulary 2. Develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking, Writing 3. Participate in spontaneous spoken discourse in familiar social situations 4. Understand and extract the essential information from a written or spoken text on a familiar topic 5. Demonstrate appropriate academic skills.
2.	18BIED 01	Micro Economics	1. Know the basic concepts in Micro economics. 2. Understand the different approaches to the behaviour of consumer and the firm. 3. Assess different forms of market structures and price output determination. 4. Evaluate the theories of factor pricing in the current scenario. 5. 5. Apply the principles of microeconomics in decision making in business.
3.	18BCOC 01	Financial Accounting-I	1. Understand the core concept of accounting system to maintain the business transactions systematically 2. Acquire the conceptual skills to prepare financial statements 3. Learn the various techniques and methods of depreciation followed in the business 4. Obtain the skill for preparing the consignment and Joint Venture accounts 5. Gain the knowledge on processing of bills of exchange in credit transactions
4.	18BCOC 02	Business Organisation	1. Acquire the knowledge on fundamental aspects of different types of business. 2. Gain insight into the government

			policies and factors affecting the size of business. 3. Enhance the knowledge on effects of business combinations. 4. Understand the different types of trade and procedures for foreign trade. 5. Understand the frame work of office organization.
5.	18BCOC 03	Principles of Management	1. Acquire knowledge on principles of management 2. Understand the corporate strategic planning techniques 3. Acquire the knowledge on organization structure 4. Familiarize with the different types of leadership 5. Understand the techniques of controlling and co-ordination
6.	18BCOI 01	**Discipline Specific Elective Course DSE-I** Business Statistics (Economics)	1. Have knowledge on the methods of data collection and tabulation 2. Be familiar about different forms of data visualization. 3. Expose the students to the methods of calculating averages and dispersions. 4. Develop skills in the use of simple multivariate techniques. 5. Equip the students to apply techniques in solving business problems.
7.	18BLE 002	English Language for Communication - II	1. Use increased vocabulary in their writing 2. Use expressions in appropriate context 3. Use the English language accurately and appropriately for different purposes 4. Understand how phrasal verbs, idioms enrich language 5. Demonstrate effective writing skills
8.	18BIED 02	Macro Economics	1. Develop knowledge about concepts, definitions and theories of macroeconomics 2. Understand the concept of national income and its linkage with various sectors 3. Identify the theories of employment and its impact on the economy. 4. Assess and evaluate the various

			determinants of macroeconomic variables 5. Apply the various principles of macro economics for setting goals and policies
9.	18BCOC 04	Financial Accounting-II	1. Understand the accounting system of non-trading concerns. 2. Gain knowledge on various methods of computing the average due dates. 3. Acquire the knowledge for preparing partnership accounting. 4. Gain analytical skill on treatment of life policies in case of retirement and death of partners. 5. Acquire the knowledge on settlement of accounts at the time of dissolution and insolvency of partnership firm.
10.	18BCOC 05	Banking law and practice	1. Incorporate the banking services to industrial requirement. 2. Acquire the knowledge to comply loan procedures. 3. Handle the queries regarding cheques effectively. 4. Employ the application of e-banking services. 5. 5. Undertake research work on evaluating the performance and services of banking sector.
11.	18BCOC 06	Marketing	1. Understand the marketing concepts and marketing environment. 2. Acquire knowledge on product planning and product life cycle. 3. Gain knowledge on choice of distribution channels. 4. Understand the various methods of sales promotion. 5. Understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.
12.	18BCOI 02	**Discipline Specific Elective Course DSE-II** Business Mathematics (Economics)	1. Know the computation of interest and the annuities 2. Knowledge on matrix algebra, differentiation and integration 3. Understand the applications of matrix algebra 4. Examine the relevance of differentiation in business related decisions. 5. Evaluate the applications of

			integration in decision making
13.	18BCOC 07	Financial Accounting-III	1. Gain knowledge on preparation of accounts in Hire purchase and Installment system. 2. Acquire the skill to prepare different types of branch accounts. 3. Transform the accounting knowledge in preparing departmental accounting. 4. Familiar with the procedure involved in the computation of insurance claims. 5. Understand the system of preparing Royalty accounts.
14.	18BCOC 08	Commercial Law	1. Understand the rules governing Indian Contract Act 2. Familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge 3. Acquire knowledge of rules governs setting up of agency and termination of agency 4. Understand the legal provisions of Sale of Goods Act. 5. Know the legal provisions of the laws relating to business.
15.	18BCOC 09	Cost Accounting	1. Understand the role of cost accounting in the complex business environment. 2. Understand the costing system and cost management system. 3. Know the significance of elements of cost in pricing of a product. 4. Analyse the methods of material issues, allocation and apportionment of overheads. 5. Compute and analyse the cost accounting system for manufacturing process, services, job, batch and unit costing.
16.	18BCOC 10	Fundamentals of Insurance	1. Understand the principles of the insurance and social security tools 2. Gain knowledge on various kinds of life insurance plans 3. Familiarize the types of the general insurance in India 4. Acquire the knowledge on functions of insurance intermediaries 5. Understand the documentation and claim settlement procedures

17.	18BCOC11	Business Communication	1. Apply business communication strategies and principles to exchange information. 2. Learn to write business letters. 3. Attain oral communication skill for effective oral presentation. 4. Acquire skills to prepare reports. 5. Enrich written communication skill for employability.
18.	18BCOI 03	**Discipline Specific Elective Course DSE-III** Computer Applications in Business (Commerce)	1. Familiarize the basic concepts and features of computer. 2. Acquire knowledge on maintaining database and networks operations. 3. Competence on documentation. 4. Acquaint the usage of excel spread sheet functions. 5. Ability to present the information with the features of power point.
19.	18BCOC 12	Corporate accounting- I	1. Understand the rules relating to issues of shares and debentures. 2. Learn the treatment of capital and revenue expenditure in pre and post incorporation of companies. 3. Compute the financial results of companies. 4. Understand the merger and acquisition procedure to corporate bodies. 5. Compute the value of shares and goodwill.
20.	18BCOC 13	Financial Markets and Services	1. Understand the how the components of financial services industries interact 2. Understand the various financial products, services and strategies by various institution 3. Analyse the structure of the financial markets 4. Know the role of SEBI for various financial institutions 5. Understand current scenario of financial services and challenges
21.	18BCOC 14	Management Accounting	1. Acquire knowledge on fundamental aspects of the management accounting tools and technique 2. Evaluate the financial performance of the companies. 3. Acquire knowledge on preparation of fund flow and cash flow statement of the company

			4. Gain knowledge on application of marginal costing and standard costing in decision making process. 5. Understand the preparation of different types of budget.
22.	18BCOC 15	Business Taxation	1. Knowledge on federal system and sources of revenue. 2. Understanding on structure of GST and registration procedure 3. Knowledge on levy and collection procedure under GST. 4. Familiarity on input tax credit and involving under GST. 5. Learning on valuation and clearance procedure under customs duty.
23.	18BCOC 16	Entrepreneurship Development	1. Understand the concept, functions and growth of entrepreneurship in India 2. Familiarise with project identification and feasibility analysis 3. Learn to design and appraise the project and factors influencing the plant location. 4. Acquire the knowledge on formalities and documentation for registration 5. Understand the government policies for the growth of SSIs.
24.	18BCOI 04	**Discipline Specific Elective Course DSE-IV** Computerized Accounting – Tally (Commerce)	1. Enhances the computerised accounting skills. 2. Ability to interpret the accounting and inventory statements by applying various financial tools. 3. Acquire knowledge on the preparation of statutory compliance through GST. 4. Acquaint to prepare bill-wise statement. 5. Learn to extract financial and inventory reports
25.	18BCOC 17	Corporate Accounting- II	1. Compute the final accounts for a corporate group like banking companies and insurance companies 2. Apply the knowledge gained in preparation of consolidated balance sheet of holding companies 3. Able to calculate the basis of charge of room rates and preparation of final accounts of hotels 4. Ability to adopt methods of valuation

			of human resources. 5. Apply the various approaches in inflation accounting.
26.	18BCOC 18	Income Tax Law and Practice-I	1. Recollect the basic concepts and definitions of Income Tax Act 2. Know the incomes exempted from tax 3. Understand the computation of income under various heads as per the provisions of Income tax. 4. Remember the exemptions, deductions and rebates under income tax rules 5. Apply income tax provisions in set off and carry forward of loss.
27.	18BCOC 19	E - Commerce	1. Acquaint with electronic means of conducting business. 2. Employ various modes of electronic delivery channels. 3. Administer e-marketing techniques in business. 4. Transform the information through e-communication mechanism. 5. Adoption of procedures against security threats.
28.	18BCOC 20	Financial Management	1. Understand the importance of the financial management and financial planning in business 2. Gain substantial knowledge on various forms and sources of capital 3. Acquire the knowledge on different methods of capital budgeting 4. Instil the students to understand the importance of forecasting of Working Capital 5. Acquire knowledge on dividend policy and valuation of firms
29.	18BCOC 21	Fundamentals of Investment	1. Familiar with financial instruments 2. Understand the challenges in market for investment 3. Analyse the risk and return associated with investment 4. Analyse investments and manage portfolios 5. Compare and contrast retirement savings plans
30.	18BCOC 22	Business Ethics (Self Study)	1. Recollect concepts on ethical management practices in the business

			2. Appreciate the value system of ancient times and its applicability to modern business situations 3. Bring up value system in an organization based on ethics 4. Adhere to corporate responsibility towards society and ethics in corporate governance. 5. Analyse and identify strategies to manage business on ethical principles
31.	18BCOC 24	On the Job Training *	1. Gains hands on experience. 2. Familiarize with business operations. 3. 3. Imbibe work culture.
32.	18BCOC 25	Income Tax Law and Practice – II	1. Familiar with administrative set up of central board of Direct Tax. 2. Able to e- file income tax returns. 3. Recollect the Income tax provision relating to tax deduction at source and advance payment of tax. 4. Ability to compute income of individuals and firms. 5. Ability to compute tax credit and provisions relating to assessment of companies.
33.	18BCOC 26	Company Law	1. Understand the provisions of Company Act 2013. 2. Familiarize on capital structure and the procedure of share allotment. 3. Gain knowledge on rights and duties of shareholders, members and types of meetings in the companies. 4. Familiar with rules and regulations relating to appointment of directors 5. Acquire the knowledge on modes and procedure of winding up of companies
34.	18BCOC 27	Auditing	1. Gain knowledge on different types of auditing in an organization. 2. Acquire knowledge on preparation and procedure of audit, audit programme and fundamental principles for internal check 3. Instil the knowledge on the verification techniques of assets, liabilities and its valuation for internal and external audit 4. Understand the share capital audit and its provisions. 5. Understand the law relating to

			appointment, rights, duties, liabilities of an auditor and preparation of audit reports
35.	18BCOC 28	Business Environment	1. Understand the elements of environment and its impact on business 2. Familiar with economic environment of business 3. Familiar with Government policies in business promotions 4. Gain knowledge on economic role of government in India 5. Appreciate the new technology policy and legal protection for natural environment and their impact on business
36.	18BCOC 29	Management Information System	1. Understand the system and technical dimensions of information in an organization. 2. Facilitate decision making for strategic advantages. 3. Enhance problem solving skill in an MIS context. 4. Administer core knowledge of system analysis, design, development and implementation. 5. Capable to build ERP Model for optimum utilization of resources in the business.
37.	18BCOC 30	Research Methodology	1. Understand the importance of research in business. 2. Identify business problems solved through research 3. Create research design for effective problem solving 4. Apply statistical tools and techniques in arriving solutions and interpretations 5. Develop research reports

B.Com (Professional Accounting)			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BLE 001	English Language for Communication- I	1. Build academic vocabulary 2. Develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking, Writing 3. Participate in spontaneous spoken discourse in familiar social situations 4. Understand and extract the essential information from a written or spoken text on a familiar topic 5. Demonstrate appropriate academic skills
2.	18BIED 01	Micro Economics	1. Know the basic concepts in Micro economics. 2. Understand the different approaches to the behaviour of consumer and the firm. 3. Assess different forms of market structures and price output determination. 4. Evaluate the theories of factor pricing in the current scenario. 5. Apply the principles of microeconomics in decision making in business.
3.	18BCPC 01	Fundamentals of Accounting- I	1. Understand the basic Accounting rules, Concepts and Conventions 2. Recap the accounting fundamentals 3. Classify the items of revenue and expenditure 4. Adoption of Accounting standards in problem solving 5. Application of Accounting principles in various business forms
4.	18BCPC 02	Business Organisation	1. Acquire the knowledge on fundamental aspects of different types of business 2. Gain insight into the government policies and factors affecting the size of business 3. Enhance the knowledge on effects of business combinations 4. Understand the different types of trade and procedures for foreign trade 5. Understand the frame work of office organization
5.	18BCPC 03	Business Law – I	1. Understand the rules governing Indian Contract Act 2. Familiarize the rights and discharge of duties by parties in Indemnity, Guaranty, Bailment and Pledge 3. Acquire knowledge of rules governs setting up of agency and termination of agency

			4. Understand the legal provisions of Sale of Goods Act 5. Know the legal provisions of the laws relati to business
6.	18BCPI 01	**Discipline Specific Elective Course DSE-I** Business Statistics	1. Have knowledge on the methods of data collection and tabulation 2. Be familiar about different forms of data visualization. 3. Expose the students to the methods of calculating averages and dispersions. 4. Develop skills in the use of simple multivariate techniques. 5. Equip the students to apply techniques in solving business problems.
7.	18BLE 002	English Language for Communication- II	1. Use increased vocabulary in their writing 2. Use expressions in appropriate context 3. Use the English language accurately and appropriately for different purposes 4. Understand how phrasal verbs, idioms enrich language 5. Demonstrate effective writing skills
8.	18BIED 02	Macro Economics	1. Develop knowledge about concepts, definitions and theories of macroeconomics. 2. Understand the concept of national income and its linkage with various sectors 3. Identify the theories of employment and its impact on the economy. 4. Assess and evaluate the various determinants of macroeconomic variables 5. Apply the various principles of macro economics for setting goals and policies
9.	18BCPC 04	Fundamentals of Accounting- II	1. Understand the accounting principles used in different business activities. 2. Distinguish the accounting fundamentals of trading and non trading concerns. 3. Classify the items of revenue and expenditure, fixed and variable charges. 4. Adoption of Accounting standards in solving accounting issues. 5. Compute claims on fire insurance.
10.	18BCPC 05	Banking Law and Practice	1. Incorporate the banking services to industrial requirement. 2. Acquire the knowledge to comply loan procedures. 3. Handle the queries regarding cheques effectively. 4. Employ the application of e-banking services.

			5. Undertake research work on evaluating the performance and services of banking sector.
11.	18BCPC 06	Business Law – II	1. Get an idea about the provision of Negotiable Instrument Act 2. Familiarize the provision of Payment of Bonus Act and coverage of establishment 3. Compute the amount due to employees as per Employees Provident Fund Act and Payment of Gratuity Act. 4. Understand the mode of arbitration under Arbitration Act 5. Apply the provisions of the various Acts and its implication on Enterprises
12.	18BCPI 02	**Discipline Specific Elective Course DSE-II** Business Mathematics (Economics)	1. Know the computation of interest and the annuities 2. Knowledge on matrix algebra, differentiation and integration 3. Understand the applications of matrix algebra 4. Examine the relevance of differentiation in business related decisions. 5. Evaluate the applications of integration in decision making
13.	18BCPC 07	Advanced Accounting	1. Know the principles governing the partnership accounts. 2. Remember the accounting rules for admission, retirement and death of a partner. 3. Understand the methods of accounting in dissolution and insolvency of a partnership firm. 4. Get the idea of valuation of goodwill of partnership firms.. 5. Able to prepare accounts of partners Lessor, Lessee and Sub lease.
14.	18BCPC 08	Principles of Insurance	1. Able to remember the risk and insurance issues relating to individual and business 2. Able to adopt the procedure for effecting life insurance 3. Compare and contrast the principles of life insurance and general insurance 4. Familiar with various types of general insurance 5. Comprehend the role of insurance industries in India
15.	18BCPC 09	Cost Accounting	1. Understand the role of cost accounting in the complex business environment 2. Understand the costing system and cost management system

			3. Know the significance of elements of cost in pricing of a product 4. Analyse the methods of material issues, allocation and apportionment of overheads 5. Compute and analyse the cost accounting system for manufacturing process services, Job , Batch and Unit Costing
16.	18BCPC 10	Company Law	1. Understand the provisions of Company Act 2013. 2. Familiarize on capital structure and the procedure of share allotment. 3. Gain knowledge on rights and duties of shareholders, members and types of meetings in the companies. 4. Familiar with rules and regulations relating to appointment of directors 5. Acquire the knowledge on modes and procedure of winding up of companies
17.	18BCPC 11	Business Communication	1. Apply business communication strategies and principles to exchange information. 2. Learn to write business letters. 3. Attain oral communication skill for effective oral presentation. 4. Acquire skills to prepare reports. 5. Enrich written communication skill for employability.
18.	18BCPI 03	**Discipline Specific Elective Course DSE-III** Computer Applications in Business	1. Familiarize the basic concepts and features of computer. 2. Acquire knowledge on maintaining database and networks operations. 3. Competency on documentation. 4. Acquaint the usage of excel spread sheet functions. 5. Ability to present the information with the features of power point.
19.	18BCPC 12	Corporate Accounting -I	1. Understand the rules relating to issues of shares and debentures. 2. Learn the treatment of capital and revenue expenditure in pre and post incorporation of companies. 3. Compute the financial results of companies. 4. Understand the merger and acquisition procedure to corporate bodies. **5.** Compute the value of shares and goodwill.
20.	18BCPC 13	Management Information System	1. Understand the system and technical dimensions of information in an organization. 2. Facilitate decision making for strategic advantages. 3. Enhance problem solving skill in an MIS

			context. 4. Administer core knowledge of system analysis, design, development and implementation. 5. Capable to build ERP Model for optimum utilization of resources in the business.
21.	18BCPC 14	Management Accounting	1. Acquire knowledge on fundamental aspects of the management accounting tools and techniques. 2. Evaluate the financial performance of the companies. 3. Acquire knowledge on preparation of fund flow and cash flow statement of the company 4. Gain knowledge on application of marginal costing and standard costing in decision making process. 5. Understand the preparation of different types of budget.
22.	18BCPC 15	Business Taxation	1. Knowledge on federal system and sources of revenue. 2. Understanding on structure of GST and registration procedure 3. Knowledge on levy and collection procedure under GST. 4. Familiarity on input tax credit under GST. 5. Learning on valuation and clearance procedure under customs duty.
23.	18BCPC 16	Financial Markets and Services	1. Understand the components of financial system. 2. Understand the various financial products, services and strategies by various institutions. 3. Analyse the structure of the financial markets. 4. Know the role of SEBI for various financial institutions. 5. Understand current scenario of financial system and challenges
24.	18BCPC17	Business Ethics	1. Recollect concepts on ethical management practices in the business 2. Appreciate the value system of ancient times and its applicability to modern business situations 3. Bring up value system in an organization based on ethics 4. Adhere to corporate responsibility towards society and ethics in corporate governance. **5.** Analyse and identify strategies to manage business on ethical principles

25.	18BCPI 04	**Discipline Specific Elective Course DSE - IV** Computerized Accounting – Tally	1. Enhances the computerised accounting skill. 2. Ability to interpret the accounting and inventory statements by applying various financial tools. 3. Acquire knowledge on the preparation of statutory compliance through GST. 4. Acquaint to prepare bill-wise statement. 5. Capable to extract financial and inventory reports.
26.	18BCPC 18	Corporate Accounting –II	1. Compute the final accounts for a corporate group like banking companies and insurance companies 2. Apply the knowledge gained in preparation of consolidated balance sheet of holding companies 3. Able to compute the basis of charge of room rates and preparation of final accounts of hotels 4. Ability to adopt methods of valuation of human resources. 5. Apply various approaches in inflation accounting.
27.	18BCPC 19	E – Commerce	1. Acquaint with Electronic means of conducting business. 2. Employ various modes of electronic delivery channels. 3. Administer e-marketing techniques in business. 4. Transform the information through e-communication mechanism. 5. Adoption of procedures against security threats.
28.	18BCPC 20	Income Tax Law and Practice- I	1. Recollect the basic concepts and definitions of Income Tax Act 2. Know the incomes exempted from tax 3. Understand the computation of income under various heads as per the provisions of Income tax. 4. Remember the exemptions, deductions and rebates under income tax rules **5.** Apply income tax provisions in set off and carry forward of loss.
29.	18BCPC 21	Financial Management	1. Understand the importance of the financial management and financial planning in business 2. Gain substantial knowledge on various forms and sources of capital 3. Acquire the knowledge on different methods of capital budgeting 4. Instil the students to understand the

			importance of forecasting of Working Capital . **5.** Acquire knowledge on dividend policy and valuation of firms
30.	18BCPC 22	Fundamentals of Investment	1. Familiar with financial instruments 2. Understand the challenges in market for investment 3. Analyse the risk and return associated with investment 4. Analyse investments and manage portfolios 5. Compare and contrast retirement savings plans
31.	18BCPC 23	Commercial Practices (Self study)	1. Understand filling of forms relating to banking and insurance by clients 2. Familiarize the forms used in stock 3. To understand e- filing of tax returns 4. Understand the procedure and filling of requisite forms in setting up new business 5. Apply the theoretical knowledge in to practice
32.	18BCPC 25	On the Job training	1. Gain hands on experience 2. Familiarize the with business operations 3. Imbibe work culture.
33.	18BCPC 26	Strategic Management	1. Remember the importance of strategic management in organisation 2. Get the idea about environment analysis and its relevance to organizations 3. Formulate and apply strategies in business transactions 4. Apply strategies in management of business by function **5.** Apply theoretical knowledge in strategy implementation and control.
34.	18BCPC 27	Auditing and Assurance	1. Familiarize the auditing and assurance standards practiced in India 2. Understand the functions of International and Indian Accounting & Assurance standards board. 3. Apply the audit procedures in internal control and authenticity of cash flow transactions 4. Implement effective internal control system in a firm through audit **5.** Apply the knowledge gained in conduct of company audit and special audit
35.	18BCPC 28	Business Environment	1. Understand the elements of environment and its impact on business. 2. Familiar with economic environment of

			business. 3. Familiar with Government policies in business promotions. 4. Gain knowledge on economic role of government in India. **5.** Appreciate the new technology policy and legal protection for natural environment and their impact on business.
36.	18BCPC 29	Income Tax Law and Practice -II	1. Familiar with administrative set up of central board of Direct Tax. 2. Able to e- file income tax returns. 3. Recollect the Income tax provision relating to tax deduction at source and advance payment of tax. 4. Ability to compute income of individuals and firms. **5.** Ability to compute tax credit and provisions relating to assessment of companies.
37.	18BCPC 30	Research Methodology	1. Understand the importance of research in business. 2. Identify business problems solved through research 3. Create research design for effective problem solving 4. Apply statistical tools and techniques in arriving solutions and interpretations **5.** Develop research reports

B. Com (CA)			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BLE001	English Language for Communication -I	1. Build academic vocabulary 2. Develop and integrate the use of the four language skills i.e. Reading, Listening, Speaking, Writing 3. Participate in spontaneous spoken discourse in familiar social situations 4. Understand and extract the essential information from a written or spoken text on a familiar topic 5. Demonstrate appropriate academic skills
2.	18BIED01	Micro Economics	1. Know the basic concepts in Micro economics. 2. Understand the different approaches to the behaviour of consumer and the firm. 3. Assess different forms of market structures and price output determination. 4. Evaluate the theories of factor pricing in the current scenario. 5. Apply the principles of microeconomics in decision making in business.

3.	18BCCC01	Financial Accounting-I	1. Understand the core concept of accounting system to maintain the business transactions systematically 2. Acquire the conceptual skills to prepare financial statements 3. Learn the various techniques and methods of depreciation followed in the business 4. Obtain the skill for preparing the consignment and Joint Venture accounts 5. Gain the knowledge on processing of bills of exchange in credit transactions
4.	18BCCC02	Business Organisation	1. Acquire the knowledge on fundamental aspects if different types of business. 2. Gain insight into the government policies and factors affecting the size of business. 3. Enhance the knowledge on effects if business combinations. 4. Understand the different types of trade and procedures for foreign trade. 5. Understand the frame work of office organization.
5.	18BCCC03	Computer Applications Practical I- Introduction to Information Technology	1. Familiarize the basic concepts and features of computer. 2. Acquire knowledge on maintaining database and networks operations. 3. Competence on documentation. 4. Acquaint the usage of excel spread sheet functions. 5. Ability to present the information with the features of power point.
6.	18BCCI01	**Discipline Specific Elective Course DSE-I** Business Statistics (Economics)	1. Have knowledge on the methods of data collection and tabulation 2. Be familiar about different forms of data visualization. 3. Expose the students to the methods of calculating averages and dispersions. 4. Develop skills in the use of simple multivariate techniques. 5. Equip the students to apply techniques in solving business problems.
7.	18BLE002	English Language for Communication - II	1. Use increased vocabulary in their writing 2. Use expressions in appropriate context 3. Use the English language accurately and appropriately for different purposes 4. Understand how phrasal verbs, idioms enrich language 5. Demonstrate effective writing skills
8.	18BIED02	Macro Economics	1. Develop knowledge about concepts, definitions and theories of macroeconomics. 2. Understand the concept of national income

			and its linkage with various sectors 3. Identify the theories of employment and its impact on the economy. 4. Assess and evaluate the various determinants of macroeconomic variables 5. Apply the various principles of macro economics for setting goals and policies
9.	18BCCC04	Financial Accounting-II	1. Understand the accounting system of non-trading concerns. 2. Gain knowledge on various methods of computing the average due dates. 3. Acquire the knowledge for preparing partnership accounting. 4. Gain analytical skill on treatment of life policies in case of retirement and death of partners. 5. Acquire the knowledge on settlement of accounts at the time of dissolution and insolvency of partnership firm.
10.	18BCCC05	Principles of Management	1. Acquire knowledge of principles of management. 2. Understand the corporate strategic planning techniques 3. Acquire the knowledge on organization structure 4. Familiarize with the different types of leadership 5. Understand the techniques of controlling and co-ordination
11.	18BCCC06	Computer Applications Practical II-Structural Query Language	1. Understand the concepts of structured query language. 2. Employ commands to create, update , manage, retrieve and control database 3. Implement various built-in functions of SQL. 4. Illustrate SQL operators, constraints and clauses to manage multifaceted data. 5. Design and build a database for application based projects.
12.	18BCCI02	**Discipline Specific Elective Course DSE-II** Business Mathematics (Economics)	1. Know the computation of interest and the annuities 2. Knowledge on matrix algebra, differentiation and integration 3. Understand the applications of matrix algebra 4. Examine the relevance of differentiation in business related decisions. 5. Evaluate the applications of integration in decision making
13.	18BCCC07	Banking Law and Practice	1. Incorporate the banking services to industrial requirement.

			2. Acquire the knowledge to comply loan procedures. 3. Handle the queries regarding cheques effectively. 4. Employ the application of e-banking services. 5. Undertake research work on evaluating the performance and services of banking sector.
14.	18BCCC08	Object Oriented Programming with C++	1. Define the structure to construct a program. 2. Able to build a function to simplify the complex real-time problems. 3. Apply major concepts of OOPs to develop a program with flexibility. 4. Acquire code reusability knowledge for application based projects. 5. Impart knowledge on file concepts to handle large volume of data.
15.	18BCCC09	Cost Accounting	1. Understand the role of cost accounting in the complex business environment. 2. Understand the costing system and cost management system. 3. Know the significance of elements of cost in pricing of a product. 4. Analyse the methods of material issues, allocation and apportionment of overheads. 5. Compute and analyse the cost accounting system for manufacturing process, services, job, batch and unit costing
16.	18BCCC10	Financial Accounting-III	1. Gain knowledge on preparation of accounts in hire purchase and installment system. 2. Acquire the skill to prepare different types of branch accounts. 3. Transform the accounting knowledge in preparing departmental accounting. 4. Familiar with the procedure involved in the computation of insurance claims. 5. Understand the system of preparing Royalty accounts.
17.	18BCCC11	Computer Applications Practical III – Programming in C++	1. Acquire the skill to visualize a program based on the requirements. 2. Describe a function to develop a program 3. Identify and rectify the errors in coding by dividing the task into various modules 4. Problem solving skill for a real time problem 5. Undertake an application oriented research project.
18.	18BCCI03	**Discipline Specific Elective Course DSE - III** Commercial	1. Understand the rules governing Indian Contract Act. 2. Familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment

		Law	and Pledge. 3. Acquire knowledge of rules governs setting up of agency and termination of agency. 4. Understand the legal provisions of Sale of Goods Act. 5. Know the legal provisions of the laws relating business.
19.	18BCCC12	Cyber Law	1. Understand the role of legal governance on issues of internet security. 2. Acquire the knowledge to execute an E-contract 3. Identify the laws related to intellectual property rights through digital medium 4. Infer the provisions of cyber security in dealing digital transactions. 5. Identify the ways to encounter the cyber crime and offences
20.	18BCCC13	Financial Markets and Services	1. Understand the components of financial system. 2. Understand the various financial products, services and strategies by various institutions. 3. Analyse the structure of the financial markets. 4. Know the role of SEBI for various financial institutions. 5. Understand current scenario of financial services and challenges.
21.	18BCCC14	Corporate Accounting	1. Understand the rules relating to issues of shares and debentures. 2. Learn the treatment of capital and revenue expenditure in pre and post incorporation of companies. 3. Compute the financial results of companies. 4. Understand the merger and acquisition procedure to corporate bodies. **5.** Compute the value of shares and goodwill
22.	18BCCC15	Marketing	1. Understand the marketing concepts and marketing environment. 2. Acquire knowledge on product planning and product life cycle. 3. Gain knowledge on choice of distribution channels. 4. Understand the various methods of sales promotion. 5. Understand the peculiarities of marketing, marketing of agricultural products and commodity market.
23.	18BCCC16	Computer Applications Practical IV:	1. Enhances the computerised accounting skills. 2. Ability to interpret the accounting and inventory statements by applying various

		Accounting Package -Tally	financial tools. 3. Acquire knowledge on the preparation of statutory compliance through GST. 4. Acquaint to prepare bill-wise statement. 5. Learn to extract financial and inventory reports.
24.	18BCCI04	**Discipline Specific Elective Course DSE - IV** Company Law (Commerce)	1. Understand the provisions of Company Act 2013. 2. Familiarize on capital structure and the procedure of share allotment. 3. Gain knowledge on rights and duties of shareholders, members and types of meetings in the companies. 4. Familiar with rules and regulations relating to appointment of directors 5. Acquire the knowledge on modes and procedure of winding up of companies
25.	18BCCC17	Software Development with Visual Basic .Net	1. Define and construct the optimal code for each module. 2. Provide an insight to design a user interface controls. 3. Develop a relationship with database. 4. Acquire the knowledge to handle the errors. 5. Display the outcome through front end application.
26.	18BCCC18	Management Accounting	1. Acquire knowledge on fundamental aspects of the management accounting tools and techniques. 2. Evaluate the financial performance of the companies. 3. Acquire knowledge on preparation of fund flow and cash flow statement of the company 4. Gain knowledge on application of marginal costing and standard costing in decision making process. 5. Understand the preparation of different types of budget.
27.	18BCCC19	Financial Management	**1.** Understand the importance of the financial management and financial planning in business. **2.** Gain substantial knowledge on various forms and sources of capital. **3.** Acquire the knowledge on different methods of capital budgeting. **4.** Instil the students to understand the importance of forecasting of Working Capital . **5.** Acquire knowledge on dividend policy and valuation of firms.

28.	18BCCC20	Entrepreneurship Development	1. Understand the concept, functions and growth of entrepreneurship in India. 2. Familiarise with project identification and feasibility analysis. 3. Learn to design and appraise the project and factors influencing the plant location. 4. Acquire the knowledge on formalities and document procedures for registration 5. Understand the government policies for the growth of SSIs.
29.	18BCCC21	Computer Applications Practical V: Visual Basic. Net	1. Demonstrate fundamental skills to develop a real-time application. 2. Acquire knowledge to develop a GUI based applications. 3. Ability to generate report from database in visual environment. 4. Interpret the functions and modules for developing a program. 5. Learn to undertake application based projects.
30.	18BCCC22	E-Commerce (Self Study)	1. Acquaint with electronic means of conducting business. 2. Employ various modes of electronic delivery channels. 3. Administer e-marketing techniques in business. 4. Transform the information through e-communication mechanism. 5. Adoption of procedures against security threats.
31.	18BCCC25	Management Information System	6. Understand the system and technical dimensions of information in an organization. 7. Facilitate decision making for strategic advantages. 8. Enhance problem solving skill in MIS context. 9. Acquire knowledge of system analysis, design, development and implementation. 10. Ability to build ERP Model for optimum utilization of resources in the business.
32.	18BCCC26	Principles of Taxation	1. Recollect the basic concepts and definitions of Income Tax Act 2. Know the incomes exempted from tax 3. Understand the computation of income under various heads as per the provisions of Income tax. 4. Remember the exemptions, deductions and rebates under income tax rules 5. Apply income tax provisions in set off and carry forward of loss.
33.	18BCCC27	Auditing	1. Gain knowledge on different types of auditing

			in an organization. 2. Acquire knowledge on preparation and procedure of audit, audit programme and fundamental principles for internal check. 3. Instil the knowledge on the verification techniques of assets, liabilities and its valuation for internal and external audit. 4. Understand the share capital audit and its provisions. 5. Understand the law relating to appointment, rights, duties and liabilities of an auditor and preparation of audit reports.
34.	18BCCC28	Business Communication	1. Apply business communication strategies and principles to exchange information. 2. Learn to write business letters. 3. Attain oral communication skill for effective oral presentation. 4. Acquire skills to prepare reports. 5. Enrich written communication skill for employability.
35.	18BCCC29	Computer Applications Practical VI: Web Designing	1. Acquire primary skills to construct a website. 2. Apply critical thinking and problem solving skills required to host a webpage. 3. Interpret the functions through script languages. 4. Demonstrate graphical language skill. 5. Exert the technical knowledge in creating webpage to cater the needs of industry.
36.	18BCCC30	Project Work	1. Ability to identify research problems and selection of research areas. 2. Acquire knowledge to design an application software. 3. Ability to choose and apply appropriate tools for programming. 4. Develop the skills to arrive a technical solution to the research problem. 5. Obtain practical knowledge in preparing the research report.

M.Com			
S. No	Course Code	Title of the Course	Course Outcome
1.	17MCOC01	Management and Organizational Behaviour	1. Knowledge on concepts and functions of management 2. Understand on organizational and individual behaviour 3. Gain knowledge on group behaviour 4. Knowledge on organizational conflicts and methods to resolve

			5. Understand the concepts of stress management
2.	17MCOC02	Managerial Economics	1. Knowledge about economic theories and principles and their applications in managerial decision making. 2. Understand law of demand and techniques of demand forecasting. 3. Knowledge on production function and its application on cost determination. 4. Knowledge on pricing policies and practices under different market conditions. 5. Know on theories of business cycles.
3.	17MCOC03	Advanced Accounting	1. Knowledge on financial accounting principles, policies and conventions 2. Acquire accounting knowledge on issue of shares and debentures 3. Ability to prepare financial statement as per Indian accounting standards 4. Gain knowledge on corporate restructuring 5. Learn the concepts related to value of shares and goodwill of companies.
4.	17MCOC04	Marketing Management	1. Able to apply marketing concept effectively in the changing environment. 2. Ability to adopt appropriate marketing mix and strategies for marketing of product and services. 3. Understand the cost effective methods for promoting sales. 4. Acquire knowledge on market segmentation 5. Compare and contrast consumer and buyer behavior to improve the marketability of the product.
5.	19MCOC05	Quantitative Techniques for business	1. Understand the probability theorems 2. Application of transportation techniques and allocation of resources in business 3. Learn to apply queuing models 4. Builds strategies for the effective utilization of resources. 5. Application of operational research techniques for decision makings
6.	17MCOC06	Cost Accounting	1. Able to prepare cost sheet and valuation of materials 2. Familiarity with the estimation of labour cost and overhead cost 3. Understand the application of costing techniques to manufacturing and service sectors 4. Application of costing techniques in

			processing industries 5. Understand the cost controlling techniques.
7.	17MCOC07	PC Software and RDBMS	1. Ability to maintain error free accounts. 2. Capable of preparing and generating the financial report. 3. Enable to analyze the performance of an organization. 4. Create a database without redundancy and complexity. 5. Employ commands to create, modify, retrieve and control database.
8.	17MCOC08	Financial Markets and Services	1. Gain knowledge on Indian financial system 2. Understand the capital market operations 3. Acquire knowledge on debt market 4. Familiar with different types of mutual funds. 5. Familiarity on various financial services offered in India
9.	17MCOC09	Management Accounting	1. Understand the significance of financial statement analysis 2. Able to analyse the financial statements by appropriate methods 3. Ability to interpret the results of financial statement analysis 4. Understand the marginal costing technique for decision making 5. Gain knowledge on preparation of report for managerial decision making
10.	17MCOC10	Accounting Software -Tally	1. Enhance the computerised accounting skill. 2. Ability to interpret the accounting and inventory statements by applying various financial tools. 3. Capable to extract financial and inventory reports. 4. Acquire knowledge on the preparation of statutory compliance through GST. 5. Acquaint to prepare payroll and BRS.
11.	17MCOC11	Business Research Methods	1. Enable to identify and formulate different types of research problems. 2. Familiarity in developing research design and sampling techniques. 3. Knowledge on measurement and scaling techniques and tools for data collection 4. Ability to process of the collected data 5. Application of statistical tools for testing hypothesis and preparation of research report

12.	17MCOC12	Entrepreneurship and Small Business Management	1. Understand the significance of entrepreneurship for economic development of the country. 2. Able to analyze micro and macro factors influencing entrepreneurship 3. Gain Knowledge on legal procedure for setting up of the enterprises and understand the preparation of projects formulation 4. Acquire knowledge on central and state governments' schemes to startup and existing enterprises Motivation to become entrepreneurs 5. Motivation to become entrepreneurs
13.	17MCOC14	Legal Aspects of Business	1. Ability to understand the laws relating to the transfer of property and claim settlement procedures 2. Familiarize with the concept of intellectual property law 3. Ability to understand the rights, powers, duties and liabilities of trustees 4. Acquire knowledge on Competition and Consumer Protection Act 5. Knowledge on Right to Information Act and environmental protection
14.	17MCOC15	Financial Management	1. Understand the finance functions. 2. Gain knowledge on various sources of finance 3. Enhancement of knowledge on working capital management techniques 4. Acquire knowledge on investment decisions using capital budgeting techniques 5. Exposure to investment opportunities and dividend policies
15.	17MCOC16	Human Resource Management	1. Gain knowledge on functions and role of HR management 2. Learn the selection process of manpower 3. Familiarity on training and developmental programmes for personnel 4. Understand the importance of employee motivation and morale qualities 5. Understand the significance of employee participation in managerial decision making
16.	17MCOC17	Business Environment **(Open Book Test)**	1. Understand the significance of b environment 2. Acquire of knowledge on economic system and government policies for businesses 3. Gain knowledge on changing dimensions

			of legal environment 4. Understand the socio-cultural environment 5. Understand to global business environment
17.	17MCOC18	Banking and Insurance Services (Self study)	1. Proficiency in understanding the functi banking service 2. Acquisition of knowledge on risk management of banking sector 3. Develop the skill to understand the different kinds of insurance and its policies 4. Comprehensive know-how in understanding principles of reinsurance 5. Well-versed in the policy and claim settlement of insurance, various banking and insurance acts with major provisions
18.	17MCOC19A	**Elective I Paper – I** Finance – Security Analysis and Portfolio Management	1. Understand the elements, investment princip risk return model 2. Acquisition of knowledge on cash flow and profit earning approach 3. Develop the skill to understand the technical analysis 4. Comprehensive know-how in understanding modern portfolio management techniques and measures 5. Application of different measures for portfolio evaluation
19.	17MCOC19B	**Elective II Paper – I** Marketing - International Marketing	1. Understand the fundamental concep international marketing 2. Acquire knowledge on international laws relating to market 3. Understand the market segmentation strategies in global market 4. Learn the product selection and pricing strategies for global marketing 5. Understand the distribution channels and promotional activities in global perspectives.
20.	17MCOC20A	**Elective I Paper II** Finance – Tax Planning and Management	1. Knowledge on nature and scope of international financial management 2. Knowledge on foreign exchange exposure and management 3. Understand the working capital management and capital budgeting in the global scenario 4. Knowledge in various international financial instruments for raising funds in international market 5. Awareness on financing of foreign trade
21.	17MCOC20B	**Elective II Paper II** Marketing – Services Marketing	1. Understanding the contributions of service towards the economic development 2. Acquisition of knowledge on marketing

			planning, targeting and positioning of services 3. Understand the pricing strategies in marketing of services 4. Ability to measure service quality 5. Understand the marketing mix of various services
22.	17MCOC22	International Business	1. Understand the concept of globlaisation and analyse the international business environment 2. Acquire knowledge on international trade agreements and trade strategies 3. Learn on international logistics system and monetary system 4. Understand to international economic organi 5. Understand the foreign direct investment impact on Indian business
23.	17MCOC23A	**Elective I Paper – III** Finance – Funds Management in Commercial Banks	1. Exposure on nature and scope of funds management 2. Knowledge on liquidity and capital funds management 3. Knowledge on management of bank deposits, bank loans and reserves 4. Able to evaluate the performance of commercial banks 5. Understanding on policy and pattern of investment of commercial banks
24.	17MCOC23B	**Elective II Paper – III** Marketing - Retail Management	1. Knowledge on retailing strategy 2. Knowledge on store location and layout procedures 3. Exposure on merchandise planning and pricing techniques 4. Knowledge on advertising and sales promotion techniques 5. Awareness on e-retailing and malls
25.	17MCOC24A	**Elective I Paper IV** Finance –International Financial Management	1. Knowledge on nature and scope of international financial management 2. Knowledge on foreign exchange exposure and management 3. Understand the working capital management and capital budgeting in the global scenario 4. Knowledge in various international financial instruments for raising funds in international market 5. Awareness on financing of foreign trade
26.	17MCOC24B	**Elective II Paper I V** Marketing - Customer Relationship	1. Knowledge on CRM concepts and its importance 2. Understand on enterprise resource planning

		Management	3. Familiarity with e-commerce and supply chain management 4. Exposure to data mining and data analysis 5. Knowledge on CRM tools and development CRM team

M. Com (CA)			
S. No	Course Code	Title of the Course	Course Outcome
1.	17MCCC01	Management and Organizational Behaviour	1. Knowledge on concepts and functions of management 2. Understand on organizational and individual behavior 3. Gain knowledge on group behaviour 4. Knowledge on organizational conflicts and methods to resolve 5. Understand the concepts of stress management
2.	17MCCC02	Managerial Economics	1. Knowledge about economic theories and principles and their applications in managerial decision making. 2. Understand law of demand and techniques of demand forecasting. 3. Knowledge on production function and its application on cost determination. 4. Knowledge on pricing policies and practices under different market conditions. 5. Know on theories of business cycles.
3.	17MCCC03	Advanced Accounting	1. Knowledge on financial accounting principles, policies and conventions 2. Acquire accounting knowledge on issue of shares and debentures 3. Ability to prepare financial statement as per Indian accounting standards 4. Gain knowledge on corporate restructuring 5. Learn the concepts related to value of shares and goodwill of companies.
4.	17MCCC04	Database Management System	1. Ability to define data structure. 2. Learn to apply various built-in functions in SQL. 3. Acquire knowledge to build a relationship with database. 4. Administer the application of database in a Company 5. Acquire the knowledge to handle the errors.

5.	19MCCC05	Quantitative Techniques for Business	1. Understand the probability theorems 2. Application of transportation techniques and allocation of resources in business 3. Learn to apply queuing models 4. Builds strategies for the effective utilization of resources 5. Application of operational research techniques for decision makings
6.	17MCCC06	Cost Accounting	1. Able to prepare cost sheet and valuation of materials 2. Familiarity with the estimation of labour cost and overhead cost 3. Understand the application of costing techniques to manufacturing and service sectors 4. Application of costing techniques in processing industries 5. Understand the cost controlling techniques.
7.	17MCCC07	Computer Applications Practical I - RDBMS and Tally	1. Enhances the computerised accounting skill. 2. Ability to interpret the accounting and inventory statements by applying various financial tools. 3. Learn to extract financial and inventory reports. 4. Apply queries and constraints in a database. 5. Design and build a database for application based projects.
8.	17MCCC08	Financial Markets and Services	1. Gain knowledge on Indian financial system 2. Understand the capital market operations 3. Acquire knowledge on debt market 4. Familiar with different types of mutual funds. 5. Familiarity on various financial services offered in India
9.	17MCCC09	Management Accounting	1. Understand the significance of financial statement analysis 2. Able to analyse the financial statements by appropriate methods 3. Ability to interpret the results of financial statement analysis 4. Understand the marginal costing technique for decision making 5. Gain knowledge on preparation of report for managerial decision making
10.	17MCCC10	Programming Language C++	1. Demonstrate the concepts of object oriented programming. 2. Define control flow statements to construct a program.

			3. Impart knowledge on dynamic memory management. 4. Employ code reusability knowledge for application based software. 5. Define the modules to handle large volume of data by applying management techniques
11.	17MCCC11	Business Research Methods	1. Enable to identify and formulate different types of research problems. 2. Familiarity in developing research design and sampling techniques. 3. Knowledge on measurement and scaling techniques and tools for data collection 4. Ability to process of the collected data 5. Application of statistical tools for testing hypothesis and preparation of research report
12.	17MCCC12	Computer Applications Practical II – C++	1. Demonstrate practical experience in developing object-oriented solutions. 2. Ability to develop structured and documented computer program. 3. Employee code reusability concept in developing a program. 4. Attain knowledge to handle the files 5. Analyze numerical operations for solving complex problems.
13.	17MCCC14	Financial Management	1. Understand the finance functions. 2. Gain knowledge on various sources of finance 3. Enhancement of knowledge on working capital management techniques 4. Acquire knowledge on investment decisions using capital budgeting techniques 5. Exposure to investment opportunities and dividend policies
14.	17MCCC15	International Business	1. Understand the concept of globlaisation and analyse the international business environment 2. Acquire knowledge on international trade agreements and trade strategies 3. Learn on international logistics system and monetary system 4. Understand to international economic organizations 5. Understand the foreign direct investment and its impact on Indian business
15.	17MCCC16	Business Environment **(Open Book Test)**	1. Understand the significance of business envir 2. Acquire of knowledge on economic system and government policies for businesses 3. Gain knowledge on changing dimensions of

			legal environment 4. Understand the socio-cultural environment 5. Understand to global business environment
16.	17MCCC17	Visual Basic .Net	1. Define logical conditions in VB.NET decision structure. 2. Provide an insight to design a user interface controls. 3. Enhance console based application through .NET framework. 4. Obtain programming skills for sequential memory allocation of records 5. Ability to generate technical report for real-scenario.
17.	17MCCC18	Computer Applications Practical III : VB .Net	1. Develop a program to solve complex business problems. 2. Employee commands to design a form. 3. Ability to customize a table based on the data. 4. Apply code reusability concept in visual environment. 5. Ability to undertake application based projects.
18.	17MCCC19	Banking and Insurance Services (Self Study)	1. Proficiency in understanding the functic banking service 2. Acquisition of knowledge on risk management of banking sector 3. Develop the skill to understand the different kinds of insurance and its policies 4. Comprehensive know-how in understanding principles of reinsurance 5. Well-versed in the policy and claim settlement of insurance, various banking and insurance acts with major provisions
19.	17MCCC20	Tax Planning and Management	1. Compare and contrast tax planning, tax management and tax evasion 2. Knowledge on tax planning under various heads of income 3. Computation of gross total income of an assesses 4. Computation of tax liability of various assesses 5. Understand the provisions relating to corporate tax planning
20.	17MCCC22	Software Engineering	1. Ability to ensure the standard of software 2. Proficiency in software development techniques. 3. Ability to estimate the cost for developing software.

			4. Acquire the knowledge to plan and design models for real-time projects 5. Employ testing terminology to ensure quality of software
21.	17MCCC23	Security Analysis and Portfolio Management	1. Understand the elements, investment princip risk return model 2. Acquisition of knowledge on cash flow and profit earning approach 3. Develop the skill to understand the technical analysis 4. Comprehensive know-how in understanding modern portfolio management techniques and measures 5. Application of different measures for portfolio evaluation
22.	17MCCC24	Computer Applications Practical IV – Java Programming	1. Ability to apply technical skill to develop a customized application 2. Ability to develop menu driven application by using GUI components 3. Acquire knowledge to import java utilities. 4. Identify platform portability for developing an application. 5. Learn to undertake web based applications

M. Phil/ Ph. D Commerce			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPCO01/ 19PHCO01	Research Methodology for Commerce	1. Enable to identify and formulate different types of research problems. 2. Able to find out the research gap in developing research design 3. Knowledge on measurement and scaling techniques and tools for data collection 4. Ability to process of the collected data 5. Application of statistical tools for testing hypothesis and preparation of research report.
2.	19MPCO02 / 19PHCO02:	Business Environment	1. Enables to apply the techniques to forecast the business by considering the micro and macro environment of the business 2. Understand the economic environment, functions of financial institutions and the operations in the financial markets 3. Know the legal aspects of the business and social environment

			4. Gain knowledge on Corporate Governance 5. Understand the functionalities of various National and International bodies in Business environment.
3.	19MPCO03B / 19PHCO03B	MARKETING MANAGEMENT	1. Able to apply marketing concept effectively in the changing environment. 2. Ability to adopt appropriate marketing mix and strategies for marketing of product and services. 3. Understand the cost effective methods for promoting sales. 4. Acquire knowledge on market segmentation 5. Compare and contrast strategic approaches in marketing of goods and services.
4.	19MPCO03A	Marketing Management	1. Able to apply the marketing concept effectively in the changing environment. 2. Ability to adopt appropriate marketing mix and strategies for marketing of products and services. 3. Understand the cost effective methods for promoting sales. 4. Acquire knowledge on market segmentation. 5. Compare and contrast strategic approaches in marketing of goods and services.
5.	19MPCO03B	Banking Services	1. Improve the efficiency in banking operations 2. Emergent of the banking standards and practices to meet the requirement of global banking 3. Increase in the efficacy of innovative financial products abs services in the banking sector 4. Acquire knowledge on electronic banking system 5. Understanding the financial inclusion and factoring
6.	19PHCO03A	Financial Management	1. To understand the techniques of Financial and its various functions 2. To know the operations of financial markets and institutions 3. To develop the advanced techniques to develop the corporate towards the society

			4. To learn the concepts of mutual funds and its new techniques 5. To know the concepts of corporate social responsibility its sustainability
7.	19PHCO03B / 19PHO03B	Marketing Management	1. Able to apply the marketing concept effectively in the changing environment. 2. Ability to adopt appropriate marketing mix and strategies for marketing of products and services. 3. Understand the cost effective methods for promoting sales. 4. Acquire knowledge on market segmentation. 5. Compare and contrast strategic approaches in marketing of goods and services.
8.	19PHCO03C	BANKING SERVICES	
9.	19PHC003D	Entrepreneurship Development	1. Able to apply entrepreneurial qualities effectively in the changing environment 2. Abilities to apply the concepts of entrepreneurship theories in developing small business. 3. Understand and adopt the requisite guidelines and procedure to set up a business. 4. Acquire knowledge and the statutory requirements in running of business. 5. Aware and utilize the government policies and institutional support for the growth of the business
10.	19PHCO03E	Geographical Indication and Marketing Management	1. Able to understand marketing concepts of GI products 2. Development of innovative Skills to adopt IPR in marketing of GI Goods 3. Understand the trademarks and patents of GI products 4. Analyse the Consumer preferences towards the GI Goods 5. Strategy to promote the GI products and Government initiatives with the GI Tags Goods and services

Department of Business Administration

MBA			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MBAC01	Management and Organisational Behaviour	1. Gain the rudiments of management which gives valuable insights and equip them with practical operational efficacies. 2. Ensure adequate capabilities to proactively plan, organise, decide and monitor organisational strategic management. 3. Get hands-on experience in designing and implementation of modules that can be practically applied for effective administration. 4. Enhance the skills set to understand the challenges and provide appropriate interventions. 5. Develop global talents enhancing critical thinking, innovative skills, collaborative team work and holistic skills.
2.	20MBAC02	Accounting for Managers	1. Prepare and analyse the financial statements and interpret the results 2. Scrutinize the different types of costs associate with the product or service and prepare cost sheets, quotation and tenders 3. Decide managerial decisions based on the cost volume profit analysis and marginal costing 4. Investigate the variances in the different costs and overheads. 5. Prepare master budgets and functional budgets based on the real life situations.
3.	20MBAC03	Managerial Economics	1. Apply economic principles to management decisions. 2. Analyze the implications of consumer demand and market supply for pricing and location decisions. 3. Evaluate the basic forces governing the operation of competitive markets and design competition strategies, including costing, pricing, product differentiation, and market environment according to the nature of products and the structures of the

			markets. 4. Understand the factors determining macro economic variables, consumption, investment, employment, the general level of prices, and interest rates and its relevance in business decisions. 5. Analyse real-world economic and business problems with a systematic theoretical framework and determine the extent to which economic institutions will influence business decisions.
4.	20MBAC04	Marketing Management	1. Formulate marketing strategies that incorporate psychological and sociological factors which influence consumers 2. Develop marketing 4.0 strategies based on product, price, place and promotion objectives. 3. Collect, process, and analyze consumer data to make informed marketing decisions. 4. Analyze marketing problems and provide solutions based on a critical examination of marketing information. 5. Apply knowledge and skills to real-world experiences to innovate and market new product ideas.
5.	20MBAC05	Quantitative Methods for Management	1. Acquire a level of proficiency in the fundamental concepts and applications necessary for decision areas requiring knowledge on functions, matrix operations, and differentiation. 2. Learn how to present, analyse and interpret data for business decisions and also to calculate and apply measures of location and measures of dispersion for grouped and ungrouped data cases. 3. Recognise correlation and regression analysis applications for purposes of description and predictions of business data. 4. Apply discrete and continuous probability distributions to various business problems. Further there will be familiarity on how to translate real-world problems into probability models.

			5. Understand and apply the concept of stationarity and variability to the analysis of time series data in various contests such as economics, finance and to quantify changes in various fields domestically and globally.
6.	20MBAC06	IT Business Modelling	1. Describe the phases of system development life cycle, the process model and agile software development. 2. Develop data flow diagrams, entity relationship diagram and perform feasibility study. 3. Determine the methods for evaluating the effectiveness and efficiency of a system by doing various levels of testing. 4. Demonstrate the knowledge on object oriented modeling and its basic principles 5. Develop design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.
7.	20MBAC07	Data-Strategic Organizational Resource (RDBMS)	1. Describe the basic concepts of Database Management Systems and design a data model and Schema in RDBMS 2. Understand and be competent in use of Structured Query Language SQL 3. Analyze and apply the operators and functions in SQL 4. Implement advanced SQL concepts and able to do Database Recovery and Query Optimization 5. Develop competencies to create constraints and use RDBMS for developing industry application
8.	20MBAC08	Business Communication	1. Effectively use various types of oral, written and digital communication modes to gear a range of business audiences. 2. Participate in team activities which lead to the development of team spirit. 3. Create and modify correct business documents using computer technology. 4. Acquire the professional development skills and plan for transition-to-work

			and career progression purposes 5. Develop interpersonal skills for contribution towards effective and satisfying personal, social and professional relationships, as well as the Utilization of electronic presentation software.
9.	20MBAC09	Research Methods for Management	1. Identify research problem and formulate appropriate research design independently. 2. Carry out systematic research and apply suitable technique for data collection. 3. Apply relevant sampling technique in data collection and process the data. 4. Analyse and interpret data using SPSS statistical package. 5. Write project report with relevant structure and contents.
10.	20MBAC10	Operations Management	1. Gain ability to recognize situations in a production system environment and familiarize on basic concepts in decision making on operations management strategy. 2. Understand and develop deep insight on location economics and layout planning. 3. Apply the relevance of production planning and control for different types of industry. 4. Provide knowledge in basic issues and methods involved in the production of goods and integrating various inventory plans to reduce the material related costs. 5. Understand the significance of quality and its interfaces with all the functional areas.
11.	20MBAC11	Financial Management	1. Understand both the theoretical and practical role of financial management in business corporations. 2. Determine risk and return and explain the trade-off between risk and return and compute the value of various financial assets such as equities, bonds, stocks, retained earnings. 3. Apply the concepts of financial management to present-day financial events.

			4. Access financial information from a wide variety of sources and use this information to research for the development of the concerns 5. Relate capital investment decisions and financial policies to business valuations.
12.	20MBAC12	Strategic Human Resource Management	1. Identify the strategic issues in HR and design an appropriate HR model. 2. Understand work behavior with competencies and skill sets to manage disruptions in Knowledge economy. 3. Relate the impact of HR on other operations to achieve organizational excellence. 4. Handle HR challenges and facilitate smooth running of the organization. 5. Work as a strategic partner in the employed organization to analyse internal capabilities and create HR as a business enabler.
13.	20MBAC13	Strategic Product and Brand Management	1. Exhibit product management experience quotient and professionalism in product management. 2. Design, develop, commercialize products and manage product portfolio. 3. Review products and brand equity of brands for strategic decisions.
14.	20MBAC14	Enterprise Resource Planning	1. Comprehend the technical aspects of ERP systems and to understand the concepts of order processing, purchase, and sales management. 2. Create item card, BOM, item register, order processing, scheduling, and purchase order management using Manufacturing Module 3. Analyze the employee absence report, payroll management, and exhibit general ledger, receivables and payables management using HR and Finance Module. 4. Understand the advanced database features, backup and restore of information. 5. Obtain practical hands on experience with ERP software and describe the selection, acquisition and implementation of enterprise systems and customization using PHP, MY

			SQL and Java Business Application
15.	20MBAC15	Legal Environment for Business (Open Book)	1. Understand the important provision in different Act. 2. Handle any transactions practically. 3. Learn to start a business understanding the legal environment. 4. Able to introspect the amendments. 5. Acquire knowledge to handle negotiable instruments.
		Interdisciplinary course	
16.	20MBAC17	Strategic Management and Corporate Governance	1. Formulate ntegrative model of strategic management process and its application Demonstrate the knowledge and abilities to analyze the competitive situation and strategic dilemma and formulate strategies and strategic plans 2. Exhibit an advanced understanding of the role of the board of directors , relationship between the management and the objectives of the relevant stakeholders in shaping the strategy 3. Critically apply corporate governance theories and frameworks to the various corporate governance structures found in their national environments. 4. Demonstrate a critical appreciation for the growing importance of corporate responsibility, corporate governance regulations and code and how it relates to corporate strategy
17.	20MBAC18	Entrepreneurial Development and Indian Ethics	1. Realize the importance of entrepreneurship as a tool for growth and development, the basic principles of entrepreneurship, the concept and basic principles of innovation. 2. Identify various Entrepreneurship Development Programs Schemes suitable for startups and other ventures 3. Portray and discriminate the typologies of entrepreneurship, the financial sources for startups, the modes of business networking -Design business plans for various ventures 4. Connect Legal and Regulatory environment to manage - Legal liabilities and obligations of the proposed Business Organization . 5. Adopt Indian ethics to effectively

			manage business enterprises.
18.	20MBAC19	Applied Operations Research	1. Identify and develop operational research models from the verbal description of the real system. Further students would understand and apply the mathematical tools that are needed to solve optimization problems. 2. Demonstrate insight with respect to solution techniques namely transportation and assignment for resource and facility allocation. 3. Develop mathematical skills to analyze and solve network models arising from a wide range of applications. Students will be equipped to determine critical path analysis to solve real life project scheduling time for timely delivery. Further the students would be able to identify right solutions among alternatives situations routing through decision tree. 4. Model a dynamic system as a queuing model and compute important performance measures. 5. Simulate the business scenario using random numbers and dynamic programming for model building.
19.	20MBAC20M/F/H/S 20MBAC20O/R/E	Specialisation e-Customer Relationship Management	1. Critically review and interpret the theoretical aspects of CRM across the main areas of sales, services and marketing. 2. Evaluate CRM technology and CRM implementation strategies. 3. Critically analyze the application of knowledge enabled CRM and its integration with demand management 4. Investigate, analyse, demonstrate CRM software 5. Implement and customize CRM in a work-related environment. 6. Design customer relationship process and strategies for e-retailers.
20.	20MBAC20F/21F	Investment and Security Analysis	1. Understand Indian and international investment environment along with its avenues and dynamics. 2. Apply various tools and techniques for analyzing and predicting stock prices. 3. Construct and manage portfolio of

			financial assets. 4. Develop understanding of derivative instruments and commodities market . 5. Identify the psychological issues in investment decision making.
21.	20MBAC20H/ 21H	Organisational Dynamics and Development	1. Understand the nature of organizational change and work stress within the context and organisational perspective. 2. Critically examine the power and politics and conflict management techniques adopted in the organisation 3. Describe the Organisation culture, norms and behaviours 4. Apply the principles of OD and know how design and development, work together for organisational strength and the importance of the intervention techniques in implementation of design and development.
22.	20MBAC20O/ 21O	Quality Management	1. Understand and evaluate the principles of quality management and to explain how these principles can be applied within quality management systems. 2. Select and apply appropriate techniques in identifying customer needs, as well as the quality impact that will be used as inputs in TQM methodologies. 3. Evaluate the cost of poor quality and process effectiveness and efficiency to track performance quality and to identify areas for improvement. 4. Choose a framework to evaluate the performance excellence of an organization, and determine the set of performance indicators that will align people with the objectives of the organization. 5. Able to analyze the effects of intellectual property rights on individuals, firm and society as a whole.
23.	20MBAC20S/ 21S	Information Security and Audit Control	1. Demonstrate knowledge on information security, security model, and security of computer systems 2. Describe the issues in security, threats, software attacks and ethical hacking 3. Understand and Control the risk by implementation of access control 4. Analyze the latest Computer Security Threats, VISA international security

			model and Cryptography 5. Critically evaluate the security of information systems with legal, ethical and professional issues
24.	20MBAC20R/ 21R	Retail Brand Management	1. Demonstrate knowledge of the nature and processes of retail branding and retail brand management. 2. Explain retail branding concepts and ideas in their own words. 3. Appraise the key issues in managing a brand portfolio and making strategic brand decisions. 4. Understand and conduct the measurement of retail brand equity and retail brand performance 5. Practically develop a retail brand, including positioning and communication. 6. Prepare a professional, logical and coherent report in the form of a retail brand audit.
25.	20MBAC20E/ 21E	Family Business Management	1. Identify the challenges in family-owned business and formulate strategies to improve overall performance. 2. Evaluate the opportunities to enhance the business performance leveraging family strengths. 3. Enhance the entrepreneurial skills set needed to manage the family business successfully. 4. Design next-gen corporate strategies to increase the profitability position of the family business. 5. Apply different models to suit the international business environment and expand family business globally.
26.	20MBAC22M/ 23M	Supply Chain and Logistics Management	1. Understand the responsibilities and interrelationships between stakeholders in supply chain network. 2. Apply relevant demand forecasting techniques and manage inventory effectively. 3. Assess various modes of transportation and decide on cost effective modes. 4. Coordinate and collaborate various processes in supply chain for improving total productivity. 5. Evaluate implications of supply chain and logistics at local and global

			perspective.
27.	20MBAC22F/ 23F	Tax Planning And Management	1. Familiarize the basic concept of Direct and Indirect Taxes 2. Acquaint the different know-how and heads of income with its components and calculate the taxable income and tax to be paid 3. Describe the transaction types which are related to VAT, its application, VAT compliance and VAT liability 4. Identify tax planning opportunities and recommend appropriate tax-saving strategies for decision making 5. Tackle tax situations for a variety of taxpayers, such as wage earners, salespersons, proprietors of small business, professionals, investors, home and rental property owners, farmers, etc.,
28.	20MBAC22H/ 23H	Human Resource Development	1. Develop rich theoretical base under pinning HRD as a key tool for organizational effectiveness. 2. Respond positively and innovatively to solve HR challenges with suitable interventions 3. Evaluate the challenges and design HRD system to develop skills, knowledge and attitude 4. Apply techniques in Motivation, Rewards Management, Training, Appraisal and other contemporary methods to improve the efficiency of employees. 5. Exhibit a personality who can be role model in developing positive mind set among employees
29.	20MBAC22O/ 23O	Project Management	1. Identify, select and initiate individual projects in an enterprise. 2. Evaluate the feasibility of the project across various functions. 3. Conduct project planning activities that accurately forecast project costs. 4. Critically evaluate the possible time and resource requirement for the completion of the project 5. Demonstrate effective organisational leadership and application of software for managing projects, project teams, resources and stakeholders.
30.	20MBAC22S/	Internet Programming	1. Demonstrate an understanding of E-

	23S	for e-Commerce	commerce related programming, database, EDI, internet commerce and website design with word press. 2. Design an innovative WebPages and create links among the web pages by using related attributes 3. Develop frames and design forms using various form controls with embedding multimedia and Combine multiple web technologies to create advanced web components 4. Develop a dynamic webpage by the use of PHP, GIMP, Blender Inkscape and XML , focusing in common web implementations 5. Exhibit a client side and server side java application and design websites using appropriate security principles
31.	20MBAC22R/ 23R	Retail Consumer Behaviour	1. Identify retailer shoppers profile and design STP strategies. 2. Link the shoppers behaviour to design strategies. 3. Design market research processes to capture shoppers characteristics and behavior.
32.	20MBAC22E/ 23E	Micro and Small Business Management	1. Realize the importance of Micro and Small Business in India. 2. Identify various Instituional Support Schemes suitable for startups and other ventures 3. Equip to draft business plan for selected ventures. 4. Understand the opportunities in AGRO Based and allied sector. 5. Develop a business model which suits the micro and small business
33.	20MBAC24A	Hotel Management	1. Conceptualise the framework of hospitality industry along with its formats and divisions. 2. Design customer friendly strategies in front-office and housekeeping functions. 3. Create innovative menu with due consideration to nutrition, quality, materials, costing and pricing. 4. Ensure cash flows through effective sales forecasting, marketing and cost control techniques.

			5. Apply interpersonal skills in employees and customer management and to facilitate operations in multicultural workplace.
34.	20MBAC24B	Hospital Management	1. Understand the structure and networking of health care industry, its administration and challenges. 2. Plan and execute administrative activities and support services for a sustainable health care delivery. 3. Promote patient centred care with continuous quality improvement in clinical and non-clinical areas. 4. Ensure smooth functioning of core process by forecasting, streamlining patient flow, staff scheduling, planning space/ facilities/ supplies, maintenance, costing and budgeting. 5. Utilise information technology for optimisation of all resources in the hospital.
35.	20MBAC24C	Retail Management	1. Understand various formats and models of retail chains in India and across Globe. 2. Perform STP (Segmenting, Targeting and Positioning) of retail formats. 3. Develop plan for merchandise procurement, display and visualization. 4. Plan and implement strategies relating to 6P's of Retailing such as location, operations, merchandising, pricing, image and promotions. 5. Comply with regulatory bodies and leverage technology to optimize retail businesses.
36.	20MBAC24D	Financial Services	1. Understand the array of financial products and services along with their regulations. 2. Demonstrate knowledge of functioning of Mutual Funds and Merchant Banking. 3. Analyse and identify suitable modes of financing (leasing, hire purchasing, venture capital and factoring) for capital formation and asset purchasing. 4. Conceptualise and utilize various financial services (stock broking, credit rating, dematerialization and digital

			money) for personal and professional growth. 5. Apply marketing strategies for promoting various financial services.
37.	20MBAC25	Environmental Management (Self Study)	1. Understand the environmental management approaches in India and internationally. 2. Recognize the generation, characteristics and impact on the environment of air, noise, water, solid waste and nuclear pollution. 3. Depict organizations as systems and their role in environmental management. 4. Explain how environmental management can be used as environmental protection and how organizations can define and manage risk. 5. Demonstrate the understanding of the relevant areas for application of environmental management tools as well as their strengths and limitations.
		Multidisciplinary course	
38.	20MBAC26	Internship Training	1. Students need to do a individual internship training for a period of 30 days in related domain areas and submit a report of the same. 2. Project to be pursued and completed during the summer vacation, immediately succeeding the II Semester. 3. This Project is to be valued internally and carries 100 marks.
39.	20MBAC27	Business Intelligence and Analytics	1. Understand data mining and business intelligence tools , algorithms and its application to business problem solving 2. Draw the difference and relationship of data using statistics and machine learning 3. Numericize real-life things and critique the role of information and analytics in supporting business processes and functions. 4. Build and enhance business intelligence capabilities by adapting the appropriate technology and software solutions. 5. Critique and interpret business intelligence and data mining reports

			prepared and effectively apply data mining techniques in a variety of business applications.
40.	20MBAC28M/ 29M	International Marketing	1. Exhibit knowledge of mega marketing forces on marketing decision-making. 2. Appreciate the global nature of marketing and appropriate measures to operate effectively in international settings. 3. Develop an innovative mindset to see dynamic business environments as opportunities, and make strategic market entry decisions in such environments 4. Understand and assess the challenges of turbulent global business environments and decide on localization or globalization of marketing strategies. 5. Design procedures and processes for exports and imports, international businesses and risk management.
41.	20MBAC28F/ 29F	International Financial Management	1. Appreciate the complexities in international finance along with an outlook of monetary system and Balance of Payments structure. 2. Explain concepts and principles of exchange rate determination and its related calculations (spread, crossrates, premium and discount) 3. Identify the risk related to forex fluctuations and manage the exposures using appropriate hedging techniques. 4. Make feasible decisions regarding financing, investment and working capital in international environment. 5. Understand the regulations in international finance and capitalize on the support services rendered by various institutions.
42.	20MBAC28H/ 29H	Industrial and Labour Relations	1. Evaluate legal issues related to fostering industrial relations by understanding the workforce composition. 2. Assume top positions in handling IR issues successfully managing and resolving grievances. 3. Act as a bridge between Management and Employees in settling differences through amicable solutions

			4. Formulate labour welfare measures that would enhance loyalty and commitment among employees 5. Regularise the implementation of statutory provisions in different Acts for the best interest of both employer and employees
43.	20MBAC28O/ 29O	Lean and Agile Manufacturing Systems	1. Understand the key requirements and concepts of lean manufacturing. 2. Apply the tools in lean manufacturing to analyse a manufacturing system and plan for its improvements. 3. Appreciate the significance of lean culture to initiate a continuous improvement change program in a manufacturing organisation. 4. Grain global knowledge on agile systems and determine the methodologies of introducing agile and scrum system in an organization. 5. Critically evaluate and implement agile processes and scrums for designated projects and review in an organization with an eye for improvement
44.	20MBAC28S/ 29S	Computer Network	1. Understand the OSI Reference Model and in particular have a good knowledge of Layers and network components 2. Exhibit knowledge on datagram, switching, routing areas and internet working 3. Describe and analyze networking protocols and their hierarchical relationship hardware and software. Compare protocol models and select appropriate protocols for a particular design 4. Describe the basic concepts of Linux and analyze the difference between Linux and windows hosting. 5. Manage multiple operating systems, systems software, network services and security and develop solutions for networking and security problems, balancing business concerns, technical issues and security.
45.	20MBAC28R/ 29R	E-Retailing	1. Critically review and interpret the e-retailers and identify the process and strategies of e-retailing

			2. Evaluate e retailing technology and implementation strategies. 3. Design e stores and e services for e commerce and m commerce. Develop strategies for branding on the web.
46.	20MBAC28E/ 29E	Social Entrepreneurship	1. Critically review and interpret about social entrepreneurship and its intersection of the various fields of entrepreneurship and social change. 2. Evaluate the opportunities and challenges in the new landscape of Social Entrepreneurship. 3. Develop as social entrepreneur,with full Funding Support and able to create a competitive business Plan.
47.	20MBAC30M/ 31M	Digital Marketing	1. Develop digital marketing communications that will gain visibility. 2. Design digital marketing plans and strategies. 3. Integrate various digital marketing channels to promote business. 4. Apply analytics for formulating digital marketing strategies and measuring effectiveness.
48.	20MBAC30F/ 31F	Strategic Cost Management	1. Understand the strategic fit between cost management and organisation's objectives. 2. Design costing systems for the organizations based on their nature to ascertain cost and value. 3. Analyze ways and means of cost control, management and improvement. 4. Apply suitable cost allocation techniques for pricing decisions. 5. Demonstrate knowledge of contemporary cost management practices
49.	20MBAC30H/ 31H	Performance Management	1. Demonstrate proficiency in designing Performance Management models facilitating increased level of performance. 2. Employ analytical skills to decide appropriate model for assessing Employee behavior 3. Identify PM linkages to strategic business management 4. Assess critically the performance gaps

			and suggest new ways of PM 5. Summarise the activities in evaluating and managing employee performance
50.	20MBAC30O/ 31O	Innovation and Technology Management	1. Update knowledge on technological changes and innovative business solutions for firm's sustainable development 2. Analyse the technology management challenges and provide solutions to manage technology in turbulent environment. 3. Apply critical thinking and employ problem solving approach to mitigate the hindrances in innovation and technology management. 4. Examine the role of innovation in organizational process and ensure innovation works as a core competency in technology management. 5. Display the breadth of skills changing the landscape of organizational success with highly recognized innovative practices to manage technology adoption.
51.	20MBAC30S/ 31S	Data Sciences with R Programming	1. Exhibit knowledge on big data analytics with statistical analysis. 2. Demonstrate the ability to think critically in making decisions based on data analytics 3. Apply broad range of methods based on statistics and informatics and can use these for data management, analysis and problem solving and have experience in deriving theoretical properties of methods involved in Data Science 4. Translate data into clear, actionable insights using R programming 5. Equip for implementation/modification of methods involved in Data Science and demonstrate business analytics applications that facilitate the effective presentation of analysis results
52.	20MBAC30R/ 31R	Supply Chain and Logistics in Retailing	1. Appreciate the unique distinctiveness of retail supply chain from traditional

			supply chains. 2. Assess suppliers and maintain relationship with suppliers. 3. Design customized supply chain network for various retail formats. 4. Understand and execute green supply chain practices in retailing. 5. Apply contemporary IT tools and techniques in retailing and logistics management.
53.	20MBAC30E/ 31E	Indian Ethos and Business Models	1. Identify the importance of Indian Ethos in Management 2. Acquire knowledge on Indian culture and value systems 3. Enhance the Scope of applying value based principles and ethos in business operations 4. Design ethically sustainable Business Models 5. Evaluate critically the success and failures of Indian Family Business houses.
54.	20MBAC32	Research Based Project	1. The Major Project to be pursued and completed in the fourth semester on the areas of specialisation, valued both internally and externally. 2. This project carries 100 marks (CIA) and 100 marks (CE).

MBA (IT)			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MBMC01	Management and Organisational Behaviour	1. Gain the rudiments of management which gives valuable insights and equip them with practical operational efficacies in IT Organisation. 2. Ensure adequate capabilities to proactively plan, organise, decide and monitor IT functions and strategies. 3. Hands on experience in designing and implementation of modules that can be practically applied for effective IT administration. 4. Enhance the skill set to understand the challenges and provide appropriate IT interventions. 5. Develop global talents enhancing critical thinking, innovative skills, collaborative team work and holistic skills.
2.	20MBMC02	Accounting for IT Organisations	1. Prepare and analyse the financial statements and interpret the results 2. Scrutinize the different types of costs associate with the product or service and prepare cost sheets, quotation and tenders 3. Decide managerial decisions based on the cost volume profit analysis and marginal costing 4. Investigate the variances in the different costs and overheads. 5. Prepare master budgets and functional budgets based on the real life situations
3.	20MBMC03	Managerial Economics	1. Apply economic principles to management decisions. 2. Analyze the implications of consumer demand and market supply for pricing and location decisions. 3. Evaluate the basic forces governing the operation of competitive markets and design competition strategies, including costing, pricing, product differentiation, and market environment according to the nature of products and the structures of the markets. 4. 4Understand the factors determining macro e5conomic variables, consumption, investment, employment, the general level of prices, and interest rates and its relevance

			in business decisions. 5. Analyse real-world economic and business problems with a systematic theoretical framework and determine the extent to which economic institutions will influence business decisions.
4.	20MBMC04	Marketing of IT Products and Services	1. Formulate marketing strategies that incorporate psychological and sociological factors which influence consumers 2. Develop marketing 4.0 strategies based on product, price, place and promotion objectives. 3. Collect, process, and analyze consumer data to make informed marketing decisions. 4. Analyze marketing problems and provide solutions based on a critical examination of marketing information. 5. Apply knowledge and skills to real-world experiences to innovate and market new product ideas.
5.	20MBMC05	Quantitative Methods for Management	1. Acquire a level of proficiency in the fundamental concepts and applications necessary for decision areas requiring knowledge on functions, matrix operations, and differentiation. 2. Learn how to present, analyse and interpret data for business decisions and also to calculate and apply measures of location and measures of dispersion for grouped and ungrouped data cases. 3. Recognise correlation and regression analysis applications for purposes of description and predictions of business data. 4. Apply discrete and continuous probability distributions to various business problems. Further there will be familiarity on how to translate real-world problems into probability models. 5. Understand and apply the concept of stationarity and variability to the analysis of time series data in various contests such as economics, finance, etc., and to quantify changes in various fields domestically and globally.
6.	20MBMC06	System Analysis and Design	1. Describe the phases of system development life cycle, the process model and agile software development. 2. Develop data flow diagrams, entity relationship diagram and perform feasibility study.

			3. Determine the methods for evaluating the effectiveness and efficiency of a system by doing various levels of testing. 4. Demonstrate the knowledge on object oriented modeling and its basic principles 5. Develop design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.
7.	20MBMC07	Data – Strategic Organisational Resources (RDBMS)	1. Describe the basic concepts of Database Management Systems and design a data model and Schema in RDBMS 2. Understand and be competent in use of Structured Query Language SQL 3. Analyze and apply the operators and functions in SQL 4. Implement advanced SQL concepts and able to do Database Recovery and Query Optimization 5. Develop competencies to create constraints and use RDBMS for developing industry application
8.	20MBMC08	Business Communication	1. Effectively use various types of oral, written and digital communication modes to gear a range of business audiences. 2. Participate in team activities which lead to the development of team spirit. 3. Create and modify correct business documents using computer technology. 4. Acquire the professional development skills and plan for transition-to-work and career progression purposes 5. Develop interpersonal skills for contribution towards effective and satisfying personal, social and professional relationships, as well as the Utilization of electronic presentation software.
9.	20MBMC09	Research Methods for Management	1. Identify research problem and formulate appropriate research design independently. 2. Carry out systematic research and apply suitable technique for data collection. 3. Apply relevant sampling technique in data collection and process the data. 4. Analyse and interpret data using SPSS statistical package. 5. Write project report with relevant structure and contents.
10.	20MBMC10	IT Project and Operations Management	1. Gain ability to recognize situations in a operation system environment and familiarize on basic project management

			process. 2. Understand and develop deep insight on location economics and layout planning for IT organisation. 3. Evaluate the feasibility of the project across various functional parameters and will be able to prepare feasibility report for project acceptance. 4. Imbibe a holistic knowledge in understanding the significance of quality and its interfaces with other functional areas. 5. Apply Project Management software for project planning, scheduling and implementation.
11.	20MBMC11	Financial Management	1. Understand both the theoretical and practical role of financial management in business corporations. 2. Determine risk and return and explain the trade-off between risk and return and compute the value of various financial assets such as equities, bonds, stocks, retained earnings. 3. Apply the concepts of financial management to present-day financial events. 4. Access financial information from a wide variety of sources and use this information to research for the development of the concerns 5. Relate capital investment decisions and financial policies to business valuations.
12.	20MBMC12	Human Resource Information System	1. Illustrate the strategic issues in HR and design an appropriate HR model for IT and ITES organisations. 2. Exhibit work behavior with competencies and skill sets to manage disruptions in Knowledge economy. 3. Reflect on the impact of eHRM process on other operations to achieve organization excellence. 4. Handle cross cultural and team based HR challenges to develop networked and virtual organizations. 5. Work as a strategic partner to analyse internal capabilities and create HR as a business enabler.
13.	20MBMC13	Business Process and Information	1. Develop ICT Strategic Vision, ICT Plans , Processes and Policies

		Technology	2. Align IT Business Plans to Corporate Strategies 3. Plan ICT infrastructure Management Process and Design ICT Policies 4. Apply Innovation Management Skills to design Internet of Things 5. Update the ICT processes and Policies to incorporate technological changes.
14.	20MBMC14	Enterprise Resource Planning	1. Comprehend the technical aspects of ERP systems and to understand the concepts of order processing, purchase, and sales management. 2. Create item card, BOM, item register, order processing, scheduling, and purchase order management using Manufacturing Module 3. Analyze the employee absence report, payroll management, and exhibit general ledger, receivables and payables management using HR and Finance Module. 4. Understand the advanced database features, backup and restore of information. 5. Obtain practical hands on experience with ERP software and describe the selection, acquisition and implementation of enterprise systems and customization using PHP, MY SQL and Java Business Application
15.	20MBMC15	Cyber Law (Open book)	1. Understand the legal intricacies of IT firms and ITES organizations 2. Logically infer cyber crimes and legal protections 3. Infer legal regime of cyberspace, electronic banking and eCommerce 4. Identify areas where Cybersecurity has to be enforced by law
		Inter Disciplinary Course	
16.	20MBMC17	Strategic Management and Business Policy	1. Describe the practical and integrative model of strategic management process that defines basic activities in strategic management 2. Demonstrate the knowledge and abilities to analyze the competitive situation and strategic dilemma and formulate strategies and strategic plans 3. Exhibit an advanced understanding of the

			role of the board of directors , relationship between the management and the objectives of the relevant stakeholders in shaping the strategy 4. Critically apply corporate governance theories and frameworks to the various corporate governance structures found in their national environments 5. Demonstrate a critical appreciation of the growing importance of corporate responsibility, corporate governance regulations and code and how it relates to corporate strategy.
17.	20MBMC18	Entrepreneurial Development and Indian Ethics	1. Realize the importance of entrepreneurship as a tool for growth and development, the basic principles of entrepreneurship, the concept and basic principles of innovation. 2. Identify various Entrepreneurship Development Programs Schemes suitable for startups and other ventures 3. Portray and discriminate the typologies of entrepreneurship, the financial sources for startups, the modes of business networking -Design business plans for various ventures 4. Connect Legal and Regulatory environment to manage - Legal liabilities and obligations of the proposed Business Organization . 5. Adopt Indian ethics to effectively manage business enterprises .
18.	20MBMC19	Applied Operations Research	1. Identify and develop operational research models from the verbal description of the real 2. system. Further students would understand and apply the mathematical tools that are needed to solve optimization problems. 3. Demonstrate insight with respect to solution techniques namely transportation and assignment for resource and facility allocation. 4. Develop mathematical skills to analyze and solve network models arising from a wide range of applications. Students will be equipped to determine critical path analysis to solve real life project scheduling time and timely delivery. Further the students would be able to identify right solutions strategic situations for decision making

			routing through decision tree. 5. Model a dynamic system as a queuing model and compute important performance measures. 6. Simulate the business scenario using random numbers for model building and decision making and also to model and solve problems using dynamic programming
19.	20MBMC20M	e- Customer Relationship Management	1. Critically review and interpret the theoretical aspects of CRM across the main areas of sales, services and marketing. 2. Evaluate CRM technology and CRM implementation strategies. 3. Critically analyze the application of knowledge enabled CRM and its integration with demand management 4. Investigate, analyse, demonstrate CRM software 5. Implement and customizeCRMin a work-related environment. 6. Design customer relationship process and strategies for e-retailers.
20.	20MBMC20F	Investment and Security Analysis	1. Understand Indian and international investment environment along with its avenues and dynamics. 2. Apply various tools and techniques for analyzing and predicting stock prices. 3. Construct and manage portfolio of financial assets. 4. Develop understanding of derivative instruments and commodities market 5. Identify the psychological issues in investment decision making
21.	20MBMC20H	Organisational Dynamics and Development	1. Understand the nature of organizational change and work stress within the context and organisational perspective. 2. Critically examine the power and politics and conflict management techniques adopted in the organisation 3. Describe the Organisation culture, norms and behaviours 4. Apply the principles of OD and know how design and development, work together for organisational strength and the importance of the intervention techniques in implementation of design and development. 5. Look at what employees, organizations and

			practitioners needs from OD in today's world
22.	20MBMC20O	Quality Management	1. Understand and evaluate the principles of quality management and to explain how these principles can be applied within quality management systems. 2. Select and apply appropriate techniques in identifying customer needs, as well as the quality impact that will be used as inputs in TQM methodologies. 3. Evaluate the cost of poor quality and process effectiveness and efficiency to track performance quality and to identify areas for improvement. 4. Choose a framework to evaluate the performance excellence of an organization, and determine the set of performance indicators that will align people with the objectives of the organization. 5. Able to analyze the effects of intellectual property rights on individuals, firm and society as a whole.
23.	20MBMC20R	Retail Brand Management	1. Demonstrate knowledge of the nature and processes of retail branding and retail brand management. 2. Explain retail branding concepts and ideas in their own words. 3. Appraise the key issues in managing a brand portfolio and making strategic brand decisions. 4. Understand and conduct the measurement of retail brand equity and retail brand performance 5. Practically develop a retail brand, including positioning and communication. 6. Prepare a professional, logical and coherent report in the form of a retail brand audit.
24.	20MBMC20E	Family Business Management	1. Identify the challenges in family-owned business and formulate strategies to improve overall performance. 2. Evaluate the opportunities to enhance the business performance leveraging family strengths. 3. Enhance the entrepreneurial skills set needed to manage the family business successfully. 4. Design next-gen corporate strategies to increase the profitability position of the family business. 5. Apply different models to suit the

			international business environment and expand family business globally.
25.	20MBMC21S	Information Security and Audit Control	1. Demonstrate knowledge on information security, security model, and security of computer systems 2. Describe the issues in security, threats, software attacks and ethical hacking 3. Understand and Control the risk by implementation of access control 4. Analyze the latest Computer Security Threats, VISA international security model and Cryptography 5. Critically evaluate the security of information systems with legal, ethical and professional issues
26.	20MBMC22M	Supply Chain and Logistics Management	1. Understand the responsibilities and interrelationships between stakeholders in supply chain network. 2. Apply relevant demand forecasting techniques and manage inventory effectively. 3. Assess various modes of transportation and decide on cost effective modes. 4. Coordinate and collaborate various processes in supply chain for improving total productivity. 5. Evaluate implications of supply chain and logistics at local and global perspective.
27.	20MBMC22F	Tax Planning and Management	1. Familiarize the basic concept of Direct and Indirect Taxes 2. Acquaint the different know-how and heads of income with its components and calculate the taxable income and tax to be paid 3. Describe the transaction types which are related to VAT, its application, VAT compliance and VAT liability 4. Identify tax planning opportunities and recommend appropriate tax-saving strategies for decision making 5. Tackle tax situations for a variety of taxpayers, such as wage earners, salespersons, proprietors of small business, professionals, investors, home and rental property owners, farmers, etc.,
28.	20MBMC22H	Human Resource Development	1. Develop rich theoretical base under pinning HRD as a key tool for organizational effectiveness. 2. Respond positively and innovatively to solve HR challenges with suitable

			interventions 3. Evaluate the challenges and design HRD system to develop skills, knowledge and attitude 4. Apply techniques in Motivation, Rewards Management, Training, Appraisal and other contemporary methods to improve the efficiency of employees. 5. Exhibit a personality who can be role model in developing positive mind set among employees
29.	20MBMC22O	Project Management	1. Identification, selection and initiation of individual projects in an enterprise and demonstrate a strong working knowledge of ethics and professional responsibility. 2. Evaluate the feasibility of the project across various functions and will be able to prepare feasibility report for project acceptance. 3. Conduct project planning activities that accurately forecast project costs. 4. Critically evaluate the possible time and resource requirement for the completion of the project
30.	20MBMC22 R	Retail Consumer Behaviour	1. Identify retailer shoppers profile and design STP strategies. 2. Link the shoppers behaviour to design strategies. 3. Design market research processes to capture shoppers characteristics and behavior.
31.	20MBMC22 E	Micro and Small Business Management	1. Realize the importance of Micro and Small Business in India. 2. Identify various Institutional Support Schemes suitable for startups and other ventures 3. Equip to draft business plan for selected ventures. 4. Understand the opportunities in AGRO Based and allied sector. 5. Develop a business model which suits the micro and small business
32.	20MBMC23 S	Internet Programming for e-Commerce	1. Demonstrate an understanding of E-commerce related programming, database, EDI, internet commerce and website design with word press. 2. Design an innovative WebPages and create links among the web pages by using related attributes 3. Develop frames and design forms using

			various form controls with embedding multimedia and Combine multiple web technologies to create advanced web components 4. Develop a dynamic webpage by the use of PHP, GIMP, Blender Inkscape and XML, focusing in common web implementations 5. Exhibit a client side and server side java application and design websites using appropriate security principles
33.	**20MBMC24 A**	**Hotel Management**	1. Conceptualise the framework of hospitality industry along with its formats and divisions. 2. Design customer friendly strategies in front-office and housekeeping functions. 3. Create innovative menu with due consideration to nutrition, quality, materials, costing and pricing. 4. Ensure cash flows through effective sales forecasting, marketing and cost control techniques. 5. Apply interpersonal skills in employees and customer management and to facilitate operations in multicultural workplace.
34.	20MBMC24 B	Hospital Management	1. Understand the structure and networking of health care industry, its administration and challenges. 2. Plan and execute administrative activities and support services for a sustainable health care delivery. 3. Promote patient centred care with continuous quality improvement in clinical and non-clinical areas. 4. Ensure smooth functioning of core process by forecasting, streamlining patient flow, staff scheduling, planning space/ facilities/ supplies, maintenance, costing and budgeting. 5. Utilise information technology for optimisation of all resources in the hospital.
35.	20MBMC24 C	Retail Management	1. Understand various formats and models of retail chains in India and across Globe. 2. Perform STP (Segmenting, Targeting and Positioning) of retail formats. 3. Develop plan for merchandise procurement, display and visualization. 4. Plan and implement strategies relating to 6P's of Retailing such as location, operations, merchandising, pricing, image and promotions.

			5. Comply with regulatory bodies and leverage technology to optimize retail businesses.
36.	20MBMC24D	Financial Services	1. Understand the array of financial products and services along with their regulations. 2. Demonstrate knowledge of functioning of Mutual Funds and Merchant Banking. 3. Analyse and identify suitable modes of financing (leasing, hire purchasing, venture capital and factoring) for capital formation and asset purchasing. 4. Conceptualise and utilize various financial services (stock broking, credit rating, dematerialization and digital money) for personal and professional growth. 5. Apply marketing strategies for promoting various financial services.
37.	20MBMC25	Environmental Management (Self Study)	1. Understand the environmental management approaches in India and internationally. 2. Recognize the generation, characteristics and impact on the environment of air, noise, water, solid waste and nuclear pollution. 3. Depict organizations as systems and their role in environmental management. 4. Explain how environmental management can be used as environmental protection and how organizations can define and manage risk. 5. Demonstrate the understanding of the relevant areas for application of environmental management tools as well as their strengths and limitations
		Multidisciplinary Course	
38.	20MBMC26	Internship Training	1. Students need to do a individual internship training for a period of 30 days in related domain areas and submit a report of the same. 2. Project to be pursued and completed during the summer vacation, immediately succeeding the II Semester. 3. This Project is to be valued internally and carries 100 marks.
39.	20MBMC27	Business Intelligence and Analytics	1. Understand data mining and business intelligence tools , algorithms and its application to business problem solving . 2. Draw the difference and relationship of data to statistics and machine learning 3. Numericize real life things and critique the role of information and analytics in

			supporting business processes and functions. 4. Build and enhance business intelligence capabilities by adapting the appropriate technology and software solutions. 5. Critique and interpret business intelligence and data mining reports prepared and effectively apply data mining techniques in a variety of business applications.
40.	20MBMC28M	International Marketing	1. Exhibit knowledge of mega marketing forces on marketing decision-making. 2. Appreciate the global nature of marketing and appropriate measures to operate effectively in international settings. 3. Develop an innovative mindset to see dynamic business environments as opportunities, and make strategic market entry decisions in such environments 4. Understand and assess the challenges of turbulent global business environments and decide on localization or globalization of marketing strategies. 5. Design procedures and processes for exports and imports, international businesses and risk management.
41.	20MBMC28F	International Financial Management	1. Appreciate the complexities in international finance along with an outlook of monetary system and Balance of Payments structure. 2. Explain concepts and principles of exchange rate determination and its related calculations (spread, crossrates, premium and discount) 3. Identify the risk related to forex fluctuations and manage the exposures using appropriate hedging techniques. 4. Make feasible decisions regarding financing, investment and working capital in international environment. 5. Understand the regulations in international finance and capitalize on the support services rendered by various institutions.
42.	20MBMC28H	Industrial and Labour Relations	1. Evaluate legal issues related to fostering industrial relations by understanding the workforce composition. 2. Assume top positions in handling IR issues successfully managing and resolving grievances. 3. Act as a bridge between Management and Employees in settling differences through amicable solutions

			4. Formulate labour welfare measures that would enhance loyalty and commitment among employees 5. Regularise the implementation of statutory provisions in different Acts for the best interest of both employer and employees
43.	20MBMC28O	Lean and Agile Manufacturing Systems	1. Understand the key requirements and concepts of lean manufacturing. 2. Apply the tools in lean manufacturing to analyse a manufacturing system and plan for its improvements. 3. Appreciate the significance of lean culture to initiate a continuous improvement change program in a manufacturing organisation. 4. Grain global knowledge on agile systems and determine the methodologies of introducing agile and scrum system in an organization. 5. Critically evaluate and implement agile processes and scrums for designated projects and review in an organization with an eye for improvement
44.	20MBMC28R	E-Retailing	1. Critically review and interpret the e-retailers and identify the process and strategies of e-retailing 2. Evaluate e retailing technology and implementation strategies. 3. Design e stores and e services for e commerce and m commerce. 4. Develop strategies for branding on the web.
45.	20MBMC28E	Social Entrepreneurship	1. Critically review and interpret about social entrepreneurship and its intersection of the various fields of entrepreneurship and social change. 2. Evaluate the opportunities and challenges in the new landscape of Social Entrepreneurship. 3. Develop as social entrepreneur, with full Funding Support and able to create a competitive business Plan.
46.	20MBMC29S	Computer Networks	1. Understand the OSI Reference Model and in particular have a good knowledge of Layers and network components 2. Exhibit knowledge on datagram, switching, routing areas and internet working 3. Describe and analyze networking protocols and their hierarchical relationship hardware and software. Compare protocol models and select appropriate protocols for a

			particular design 4. Describe the basic concepts of Linux and analyze the difference between Linux and windows hosting. 5. Manage multiple operating systems, systems software, network services and security and develop solutions for networking and security problems, balancing business concerns, technical issues and security.
47.	20MBMC30M	Digital Marketing	1. Develop digital marketing communications that will gain visibility. 2. Design digital marketing plans and strategies. 3. Integrate various digital marketing channels to promote business. 4. Apply analytics for formulating digital marketing strategies and measuring effectiveness.
48.	20MBMC30F	Strategic Cost Management	1. Understand the strategic fit between cost management and organisation's objectives. 2. Design costing systems for the organizations based on their nature to ascertain cost and value. 3. Analyze ways and means of cost control, management and improvement. 4. Apply suitable cost allocation techniques for pricing decisions. 5. Demonstrate knowledge of contemporary cost management practices
49.	20MBMC30H	Performance Management	1. Demonstrate proficiency in designing Performance Management models facilitating increased level of performance. 2. Employ analytical skills to decide appropriate model for assessing Employee behavior 3. Identify PM linkages to strategic business management 4. Assess critically the performance gaps and suggest new ways of PM 5. Summarise the activities in evaluating and managing employee performance
50.	20MBMC30O	Innovation and Technology Management	1. Update knowledge on technological changes and innovative business solutions for firm's sustainable development 2. Analyse the technology management challenges and provide solutions to manage technology in turbulent environment. 3. Apply critical thinking and employ problem

			solving approach to mitigate the hindrances in innovation and technology management. 4. Examine the role of innovation in organizational process and ensure innovation works as a core competency in technology management. 5. Display the breadth of skills changing the landscape of organizational success with highly recognized innovative practices to manage technology adoption.
51.	20MBMC30 R	Supply Chain and Logistics in Retailing	1. Appreciate the unique distinctiveness of retail supply chain from traditional supply chains. 2. Assess suppliers and maintain relationship with suppliers. 3. Design customized supply chain network for various retail formats. 4. Understand and execute green supply chain practices in retailing. 5. Apply contemporary IT tools and techniques in retailing and logistics management.
52.	20MBMC30 E	Indian Ethos and Business Models	1. Identify the importance ofIndian Ethos in Management 2. Acquire knowledge on Indian culture and value systems 3. Enhance the Scope of applying value based principles and ethos in business operations 4. Design ethically sustainable Business Models 5. Evaluate critically the success and failures of Indian Family Business houses.
53.	20MBMC31 S	Data Sciences with R Programming	1. Exhibit knowledge on big data analytics with statistical analysis. 2. Demonstrate the ability to think critically in making decisions based on data analytics 3. Apply broad range of methods based on statistics and informatics and can use these for data management, analysis and problem solving and have experience in deriving theoretical properties of methods involved in Data Science 4. Translate data into clear, actionable insights using R programming 5. Equip for implementation/modification of methods involved in Data Science and demonstrate business analytics applications that facilitate the effective presentation of analysis results
54.	20MBMC32	Research Based Project	The Major Project to be pursued and completed

			in the fourth semester on the areas of specialisation, valued both internally and externally. This project carries 100 marks (CIA) and 100 marks (CE).

M. Phil / Ph. D Management			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPBA01/ 19PHBA01	Research Methods for Management	1. Identify research problem and formulate appropriate research design independently. 2. Carry out systematic research and apply suitable technique for data collection. 3. Apply relevant sampling technique in data collection and process the data. 4. Analyse and interpret data using SPSS statistical package. 5. Write project report with relevant structure and contents.
2.	19MPBA02/ 19PHBA02	General Management	1. Enhance the knowledge on basic managerial functions for effective understanding of organisational setting 2. Making optimal managerial decisions by analysing the business environment in a systematic framework. 3. Apply the tools and metrics in designing Key performance Indicators for operational efficiency 4. Advanced and futuristic thinking to handle strategic data for decision making 5. Ensure transfer of knowledge and prepare industry –ready graduates with global perspective.
3.	18MPBA03A	Digital Marketing	1. Explain the role and importance of digital marketing in a rapidly changing business landscape 2. Discuss the key elements of a digital marketing strategy 3. Illustrate how the effectiveness of a digital marketing campaign can be measured 4. Demonstrate advanced practical skills in common digital marketing tools such as SEO, SEM, Social media and Blogs.
4.	18MPBA03B	Green Marketing	1. Examine the symbiotic role played by marketing in business sustainability. Discusses the environmental changes,

			concerns and issues across the world and explores the concept of sustainability from economic and regulatory perspectives. 2. Explore the opportunities and threats arising from environmentalism on firms and marketers. 3. Understand the issues and challenges faced by the marketers in designing and implementing green marketing strategies.
5.	18MPBA03C	Foreign Exchange Market	1. Able to perform various Foreign Exchange transactions. 2. Understand the functions and structure of foreign exchange market and the factors affecting the exchange rate 3. Analyze the risks involved in the fluctuations of exchange rates and techniques to cover those risks. 4. Identify the various financial market instruments and exchange control requirements for dealing in various currencies.
6.	18MPBA03D	E-Retailing	1. Describe how internet technologies have expended the tools available to marketing and their impact on marketing strategy. 2. Apply the elements of the marketing mix in online context. 3. Understand web approach and elements of branding. 4. Analyse online food delivery apps 5. Describe scenarios for B2B, B2C e-commerce, including supply chain management.
7.	18PHBA03C	Talent Management	1. Identify the conceptual framework of talent and talent management practices. 2. Relate the theoretical talent management process to job crafting, assess talents and suggest measures to fill talent gaps. 3. Build a body of knowledge base and models in talent management process, strategies and practices. 4. Design talent management processes that can be implemented and managed by firms for competitive advantage.
8.	18PHBA03D	Quality Management Systems	1. Enhance the knowledge on various aspects of Service Quality 2. Application of suitable tools and techniques

			for Quality Analysis 3. Systematic Analysis of data for improving Quality of services
9.	18PHBA03E	Digital Finance and Banking	1. Understand various concepts of Digital Finance and Alternative Finance. 2. Appreciate the evolution of fintech, its regulation and application of data analytics. 3. Comprehend various digital banking technologies and payment systems. 4. Use various E-banking tools and technologies and make electronic payments. 5. Foresee and analyze various issues in Digital Finance and Banking.
10.	18PHBA03G	Transformational Leadership	1. Discuss and debate good practice leading in a culturally diverse environment. 2. Identify the organizational barriers-and solutions- to transformational leadership. 3. Strengthen their emotional intelligence to become a more effective leader. 4. Engage and evaluate models and approaches to transformational leadership. 5. Design a strategy for enhancing the transformational quality of leadership and governance in an organization.
11.	**18PHBA03H**	**Corporate Social Responsibility**	1. Evaluate the level of commitment to CSR of various organizations and explain how it can be a source of competitive advantage. 2. Analyse the impact of CSR implementation on corporate culture, particularly as it relates to social issues. 3. Compare and contrast the multiple viewpoints and tradeoffs that exist in the area of CSR. 4. Understand the influence of ethical principles in managerial decision making. 5. Critically evaluate organizational performance of businesses from a variety of perspectives-financial, social and environmental
12.	19 MPBA 01/ 19 PHBA01	Research Methods for Management	1. Identify research problem and formulate appropriate research design independently. 2. Carry out systematic research and apply suitable technique for data collection. 3. Apply relevant sampling technique in data collection and process the data. 4. Analyse and interpret data using SPSS statistical package. 5. Write project report with relevant structure and contents.

13.	19 MPBA 02/ 19 PHBA02 General Management	General Management	1. Enhance the knowledge on basic managerial functions for effective understanding of organisational setting 2. Making optimal managerial decisions by analysing the business environment in a systematic framework. 3. Apply the tools and metrics in designing Key performance Indicators for operational efficiency 4. Advanced and futuristic thinking to handle strategic data for decision making 5. Ensure transfer of knowledge and prepare industry –ready graduates with global perspective.
14.	19PHBA03A	Entrepreneurship Development	1. Derive a model that would make students to create fresh and Innovative ideas. 2. Create an Eco System that is more transparent and effective for the students. 3. Create an effective investment model for investors that would allow them to invest in fresh Ideas form students.
15.	19PHBA03B	Corporate Governance & Organization Citizenship Behaviour	1. Identify area of research in Corporate Governance and organizational citizenship. 2. Sketch the impact of Corporate Governance Practices on Organizational Citizenship Behaviour. 3. Apply problem solving and critical thinking abilities to analyse and develop alternative Corporate Governance Practices for effective Organizational Citizenship. 4. Develop models and paradigms illustrating effects of Corporate Governance practices on Organizational Citizenship Behaviour.
16.	19PHBA03C	HR AUDIT	1. Understands the process of designing effective HR Audit strategies and to recognize how Audit decisions are made and managed over time. 2. Enables the scholar as an effective HR Audit manager with adequate skills required for any organization. 3. Analyze HR audit problems and find ways to solve them by collecting relevant data and analyzing it in the appropriate manner to reach valid and insightful results and conclusions. 4. Acquires the ability to generate and evaluate human resource audit strategies in relation

			to real-world scenarios.
17.	19PHBA03D	Human Resource Management and Information Technology	1. Acquaint with changing dynamics of technology in knowledge economy. 2. Ensure adequate capabilities to proactively plan organize and monitor strategic HRM process with the help of HR models. 3. Demonstrate a thorough understanding of the strategic value of HRIS and how it contributes to organizational success. 4. Relate the impact of IT on HR functions to manage break through environments. 5. Enhance skill sets to handle the challenges of Human-Computer interaction and effective integration through behavioral patterns
18.	19PHBA03E	Trends in Human Resources	1. Understands the basic concepts and functions of Human Resource Management. 2. Analyse the process in Human Resource Management. 3. Acquire basic of innovation and creativity techniques. 4. Assess the Management Concepts in innovation. 5. Identify the new HR trends and concepts.
19.	19PHBA03F	Employee Engagement	1. Identify the conceptual framework of employee engagement practices. 2. Relate the theoretical employee engagement process to employee retention, job design, employee empowerment and leadership 3. Build a body of knowledge base and model in employee engagement, strategies and practices. 4. Understand the relationship of employee engagement with various HR initiatives
20.	19PHBA03G	Service Quality in Insurance Industry	1. Analye the dimensions of service quality 2. Assess the gap between Service Quality and Customer Expectation 3. Propose measures to improve service quality in Insurance Industry
21.	19PHBA03H	Employee Retention	1. Understand more about employees and reason for leaving the organization 2. Identify the various retention plans and programs. 3. Analyze and discuss the current issues/ challenges in retaining employees. 4. Provide the solutions/measures to retain employees in the organization.
22.	19PHBA03I	Entrepreneurial	1. Explain the concepts of entrepreneurial

		Finance	finance and its difference to traditional corporate finance. 2. Analyze the financing needs of an entrepreneurial firm. 3. Explain the various options for financing new ventures along with its suitability 4. Discuss and structure the contents of venture capital deal objectively 5. Conceptualise and practice the compliance procedures related to financing of new ventures. 6. Analyze and discuss current research issues in entrepreneurial finance.
23.	19PHBA03J	Behavioural Finance and Neuroeconomics	1. Explain the concepts and foundations of traditional finance and different theories affects the rational finance 2. Enhance the knowledge with the various types of beliefs, heuristics and biases in financial markets. 3. Conceptualize the basic foundations of behavioural finance theories and able to ascertain how the market outcomes and valuation will be. 4. Analyze the different types of corporate finance where the behavioural finance is applied and other insights in decision making. 5. Elucidate the concept of neuroeconomics and how an evolutionary perspective is important for neuroeconomics.
24.	19PHBA03K	Training and development	1. Identify the profile of Attitude, Skills and Knowledge of people towards challenges of Industry 4.0. 2. Analyze the training needs of skill development and comprehend the shortcomings 3. Create Strategies for Employability Enhancement Skills Sets to equip with appropriate requirements to increase the rate of employability.

Department of Tourism Management

BBA Tourism			
S. No	Course Code	Title of the Course	Course Outcome
1.	18 BTOC 01	Principles of Business Organization	1. Enables the students to imbibe knowledge on nature of business and entrepreneurial skills 2. Develop deep understanding on various forms of business organization 3. Develop skills on the importance of different business units 4. Facilitates the students on significance of causes and effects of business combination 5. Inculcates the different types of trades and emphasize on government procedures
2.	18 BTOC 02	Tourism Principles and Practices	1. 1.Understand the concepts of Tourism and its economic importance 2. Gain knowledge on evolution of tourism 3. Familiarize the international and national tourism organizations 4. Gain knowledge of functions of tour operators and travel agencies 5. Gain insight on tourism planning and development
3.	18 BTOC 03	Transport Management	1. Understand various Transport Systems 2. Familiarize with Air Transport Regulations 3. Gain knowledge on Road transportation documents and rail tours 4. Aware of different types of water transportation 5. Gain insight on transportation elements and growth of logistics management
4.	18 BTOC 04	Management Concepts	1. .Gains knowledge on nature, scope and different levels of management 2. Develops skills on significance of planning process and types of planning 3. Understand the principles and types of organization 4. Gain skills on the importance of direction and coordination 5. Attain values on importance and functions of effective communication
5.	18 BTOC 05	Tourism Business	1. Understand the basic concept of Travel agents. 2. 2.Gain knowledge in the various techniques of tour operation business. 3. 3.Apply theoretical knowledge and skills in elective areas of reservation. 4. 4.Aware of various documents in travel

			industry. 5. 5.Execute the knowledge relating to create effective presentation of tour packaging
6.	18 BTOC 06	Indian Tourism Resources Indian Tourism Resources(Eco Tour/Field visits/Industrial Visit)	1. Understand the Natural and manmade tourism resources of India 2. Familiarize various religious centers in India 3. Gain insight on various Art forms of India 4. Analyze the significance of Indian Cuisines and festivals 5. Gain Knowledge on Wildlife sanctuaries and forms of Tourism
7.	18 BTOI 02	DSE –II Entrepreneurship Development	1. Understanding about Entrepreneur, their qualities, characteristics, functions and types. 2. Apply knowledge to learn about the past, present,, current and future scenario of the evolution of Entrepreneurship. 3. Evaluate the methods of evaluating financial feasibility ad cost of production. 4. Analyse project appraisal and report like sectoral project and performa of project report. 5. Understand the entrepreneurial growth, role of government, NGO‟s, entrepreneurship development programmes.
8.	18 BTOC 07	Organizational Behaviour	1. Understand the role of group dynamic 2. Attain knowledge about human behavior in organization 3. Gain idea about the job satisfaction 4. Explore employee productivity through motivation 5. Execute leadership quality in organizations
9.	18 BTOC 08	MICE Tourism	1. Understand the importance of MICE industry 2. Analyze the trend practices in event management 3. Develop an insight on event planner. 4. Gain knowledge on conference facilities in India 5. Apply theoretical knowledge to promote, implement and conduct special events.
10.	18 BTOC 09	Airport Functions and Ticketing	1. Gain knowledge on codes and Configuration 2. Apply theoretical knowledge in booking tickets 3. .Gain an insight on passenger handling and baggage handling 4. Gain knowledge on International Air Transport regulations 5. Familiarize with Billing procedures between travel agencies and airlines

11.	18BTOC 10	Tourism Geography	1. Learn the Physiographic divisions of India 2. Understand the concepts of GIS and Remote sensing 3. Familiarize with Map reading,time zones and time differences 4. Aware of factors affecting tourism development 5. Learn about worldwide destinations
12.	18 BTOC 11	Business Communication	1. Gain knowledge on importance and objectives of communication. 2. Develops understanding on various types of communication. 3. Acquire skills on writing a business letter, resume and report. 4. Inculcates students about the significance of committees, conferences and interpersonal effectiveness. 5. Gains insights on Stress, Time and Conflict Management
13.	18 BTOC13	Itinerary Planning and Costing	1. Understand components of itinerary preparation 2. Gain knowledge on types of tours and travel. 3. Attain knowledge on the roles and responsibilities of tourist guide. 4. Apply knowledge of tourist circuit for effective itinerary planning 5. Analyse on theories and prepare tour costing.
14.	18 BTOC 14	Marketing Management	1. Gain knowledge on fundamental concepts of Marketing Management. 2. Develops skills on buying behaviour of customers. 3. Understand the concepts of product life cycle. 4. Inculcate the concepts of product pricing and pricing decisions. 5. Gains skills on Brand image and Brand equity
15.	18 BTOC 15	Human Resource Management	1. Attain knowledge about human resource function in the Organization 2. Acquire idea about the Human Resource Planning, Manpower planning. 3. Obtain Knowledge about Recruitment, Selection, Training, Performance Appraisal. 4. Application of ideas to evaluate the salary benefits, incentives, fringe benefits. 5. Develop wholesome knowledge about key elements of human resource management
16.	18 BTOC 16	Front Office and	1. Gain knowledge of functions of front office

		House Keeping Management	and housekeeping department. 2. Understand the duties and responsibilities of hotel personnel. 3. Develop an insight on work culture interdepartmental co ordination of hotel operation functions 4. Apply the theoretical knowledge, to a range of front office and housekeeping tasks and situations in a commercial environment. 5. Analyse the trend practices of Front office and House Keeping and its role in the hospitality industry.
17.	18 BTOC 17	Finance for Tourism	1. Able to understand about importance, scope of financial management and Finance function. 2. .Develop skills on financial planning and estimating capital requirements 3. Gains knowledge on sources of finance, Leverages and FERA, FEMA guidelines 4. Acquire skills on various marginal costing methods, and its managerial application. 5. Equip knowledge on hotel departmental accounting, food & beverage business and revenue calculation.
18.	18 BTOC 18	Business Ethics	1. Knowledge on ethics and value systems 2. Gain an insight on ethical practices of marketing 3. Acquires awareness on the importance of discipline 4. Familiarizes on social responsibilities in business 5. Develop skills to face various ethical issues
19.	18 BTOC 19	Airfare Construction	1. Knowledge on types of Journey 2. Understand traffic conference areas,time zones and time differences 3. Aware of Currency rules and conversion procedures 4. Learn oneway RT and CT fare construction methods 5. Understand the Importance of Stopovers and Connections.
20.	18BTOC20	Sustainable Tourism and Disaster Management	1. Gain knowledge on principles of Sustainability and impacts of tourism 2. Understand Sustainable tourism planning 3. Understand the Approaches on Sustainable Tourism 4. Gain insight on types of disasters and mitigation process 5. Comprehend disaster management techniques and strategies

21.	18 BTOC 21	International Business Management	1. Familiarization about global business environment. 2. Acquire knowledge on global business theories. 3. Familiarize with globalization, privatization and liberalization. 4. Attain knowledge on financial factors and export management. 5. Gain an insight on investment and Trading.
22.	18BTOC22	Catering Management	1. Understand the basics of hotel industry 2. Gain knowledge on F&B service Department 3. Aware of different types of menu 4. Understand methods of preparation 5. Develop an insight on organisation structure
23.	18 BTOC 23	Recreation and Adventure Tourism (Self Study)	1. Knowledge on different types of adventure tourism. 2. Learn different adventure tourism activities and centers in India 3. Gain knowledge on Beaches and Islands 4. Learn an Insight to hard and soft adventure activities 5. Gain an insight to holy adventure centers of the country
24.	18 BTOC 26	E -Tourism	1. Learn the historical development of E-Tourism 2. Understand the operational use of IT in Tourism. 3. Apply the concept of Global distribution system 4. Study the typologies of E Tourism 5. Create competitive strategies for Future of E Tourism
25.	18 BTOC 27	Heritage Tourism	1. Remember the Indian history, Foreign rulers of southern India 2. Attain Knowledge about Indian Architecture, Monuments. 3. Obtain an insight about sculptures, paintings. 4. Gain idea about the world heritage sites in UNESCO"s list. 5. Evaluate the case study of different heritage sites in India.
26.	18BTOC 28	Services Marketing	1. Understand the concepts & components of Marketing. 2. Aware of marketing opportunities 3. Able to manage capacity constraints 4. Gain insight on elements of service marketing mix 5. Familiarize with methods of pricing and

			factors affecting pricing in service sector
27.	18BTOC29	Tourism Economics	1. Identifying the theoretical and conceptual basis of economic analysis of tourism, both from the microeconomic and the macroeconomic perspective. 2. Describing the demand and supply of tourism, cycles and economic growth, as well as international economic relations in the sector. Determining the economic impact generated by tourism. 3. Relating the economic dimension of tourism through the analysis of demand and supply of tourist products in the context of markets and economic cycles, among other elements. 4. Understand tourism cost analysis, Break even analysis, supply and cost. 5. Importance of pricing decision, price determination, pricing strategy and Economics of Advertisement and Marketing
28.	18 BTOC 30	Destination Management(Eco Tour/Field visits/Industrial visit)	1. .Knowledge on Destination types and Characteristics 2. Understand destination planning process 3. Familiarize with destination image development and branding 4. Gain an insight on destination promotion 5. Aware of PPP in destination development

MBA Tourism & Travel Management			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MTAC01	Management Concepts and Organizational Behaviour	1. Knowledge on levels of management, planning and MBO. 2. Understand the concepts of organization structure, emerging trends and impact of technology. 3. Gain insight on motivation, leadership styles, communication, control process and techniques. 4. Gain knowledge on individual behaviour, personality, attitudes, beliefs, values, transaction analysis and management of stress. 5. Apply understanding on group behaviour, formation, conflict, negotiation, management of change and organisational development.
2.	20MTAC02	The Business of Tourism	1. Knowledge on tourism industry, Development, products and organizations 2. Understand the concept of travel motivation and behaviour 3. Familiarize with the role of tour operator and travel agencies 4. Understand the significance of various passenger Transportation 5. .Enhance knowledge on Ancillary Tourism services
3.	20MTAC03	Human Resource Management for Service Industry	1. Understand the nature and functions of Human Resource Management in the Organization. 2. Familiar with Recruitment methods, Selection process, Training and Performance Appraisal. 3. Learn about Human Resource Planning and Development. 4. Aware of key issues between management and employees. 5. Understand the significance of Tourism Industry in Economic and Employment aspect.
4.	20MTAC04	Personality Development and Business Communication	1. Gain knowledge on importance and objectives of communication. 2. Develops understanding on principles of communication. 3. Acquire skills on various types of communication.

			4. Inculcates students about personality development. 5. Gains insights on Stress, Time and Conflict Management.
5.	20MTAC05	Tourism French	1. Will acquire basic French language communicational skills. 2. Will be able to use the French language effectively in the tourism industry. 3. Will develop the skill to interact with foreign tourist. 4. Will have acquired geographical knowledge of France and Francophone countries. 5. Will have the familiarity of the monuments and its history required for the Tourism Industry
6.	20MTAC06	Tourism Resources (Tour)	1. Knowledge on Tourism products 2. Aware of Performing arts, festivals and activities 3. Knowledge on Manmade resources 4. Insight into Natural resources, hill stations, beaches and islands 5. Become familiar with various tourist circuits
7.	20MTAC07	Customer Relationship Management	1. Understand the basic concepts of Customer Relation Management. 2. Gain knowledge about customer retention and services 3. Apply different strategies to retain customers, developing customer life cycle 4. Evaluate the application of IT in travel industry 5. Develop wholesome knowledge about customer retention, strategies in customer retention.
8.	20MTAC08	Tourism Marketing	1. Understand the nature and characteristics of Tourism Marketing 2. Learn the concept of Tourism Product pricing and promotion 3. Aware of distribution channels in Tourism Industry 4. Gain the significance of people and process in tourism services 5. Analyze the strategies and technology in Tourism marketing & Research
9.	20MTAC09	Accounting and Financial Management	1. Understand financial accounting, double entry system, preparation of journal, ledger and trial balance and preparation of balance sheet. 2. Apply knowledge to know the accounting

			for non-profit organisation and travel agency accounting. 3. Aware of accounting for non-trading concerns, miscellaneous accounts. 4. Gain knowledge on costing and cost accounting, types and preparation of cost sheets. 5. Analyse financial management, functions and various sources of finance.
10.	20MTAC10	World Tourism Geography	1. Knowledge on basics about Geography 2. Understand the concepts of GIS and remote sensing and IATA areas of the world 3. Familiarize on North and South America 4. Understand the Geography systems in Europe and Africa 5. Analyse case study in various countries
11.	20MTAC11	Culture and Heritage Tourism	1. Understand prehistoric Indian culture & civilization. 2. Gain knowledge on different religious mythology and shrines of India. 3. Learn about Intangible cultural heritage of India. 4. Gain an insight on architectural heritage of India and World Heritage sites in India. 5. Attain Knowledge on various other cultural treasures Fairs and festivals, cuisines and paintings of India.
12.	20MTAC12	Mini Project	1. Understand the basic concepts of Research Process. 2. Gain knowledge about Sample plan and Sample design 3. Learn different scaling techniques for data collection 4. Apply various parametric and Non-parametric tests in Research 5. Able to Interpret the data and write the report
13.	20MTAC14	Business Etiquettes and Tourism Entrepreneurship	1. Gain knowledge on classification and types of successful entrepreneurs 2. Inculcate the evolution of Indian entrepreneurship and problems of women and rural entrepreneurs 3. Familiarize with various financial feasibility and managerial feasibility 4. Develop on business ideas and marketing feasibility 5. Understand skills on Project preparation
14.	20MTAC15	Destination Planning and Development	1. Understand the concepts of Destination 2. Familiarize on Destination Image and

		(Tour)	products 3. Knowledge on destination policies and dimensions 4. Understand the fundamentals of destination planning 5. Familiarise destination promotion and branding
15.	20MTAC16	Tourism Law and Policies(Open Book Test)	1. Learn the concept of tourism planning and its importance 2. Understand the technique of plan formation 3. Critically evaluate the destination zone planning models 4. Analyze the WTO Planners guide for the development 5. Understand the role of national policies in tourism and community Perception
16.	20MTAC17	Aviation and Cargo Management	1. Knowledge about evolution of Aviation Industry 2. Gain knowledge on IATA codes and OAG guide. 3. Knowledge on scheduled and non scheduled Air Transportation 4. Aware of check in formalities and baggage checking procedures 5. Knowledge about Cargo management
17.	20MTAC18	Managerial Economics (Self Study)	1. Knowledge on tourism industry, Development, products and organizations 2. Understand the concept of travel motivation and behaviour 3. Familiarize with the role of tour operator and travel agencies 4. Understand the significance of various passenger Transportation 5. Aware of Ancillary Tourism services
18.	20MTAC19A	Hotel Operations and Management	1. Knowledge on the evolution of hospitality services and its demand and supply. 2. Aware of front office management, CRS in front office and travel desk. 3. Knowledge on housekeeping, its organization structure and relationship with other departments. 4. Analyze the functioning of food and beverage services, MICE and other food services. 5. Gain knowledge on the administration and finance, safety management and management channel distribution.
19.	20MTAC19B	Specialization Paper Airfare Construction	1. Understand the types of journey and traffic conference areas and places in the

		and Ticketing	map 2. Familiarize with three letter codes of cities, airports, air lines and currencies 3. Understand and apply fare calculation techniques 4. Learn about ticketing and CRS 5. Comprehend on travel documents and its relevance on overseas travel.
20.	20MTAC20	Internship	1. Gain knowledge about travel industry. 2. Ability to prepare travel documents. 3. Design travel itinerary. 4. Exposure to different GDS for travel booking. 5. Gain knowledge on different travel regulations.
21.	20MTAC21	Information Technology and E-Tourism	1. Knowledge on Information Technology, Networking of computers and E-Marketing 2. Familiarize with the application of ICT systems in Tourism. 3. Understanding E-Tourism and typologies of E-Tourism. 4. Understand payments systems in E-Tourism. 5. Knowledge on Starting an E-Business.
22.	20MTAC22A	Specialization Paper Eco-tourism for Sustainable Development	1. Gain an insight on ecology and conservation 2. Gain knowledge on concepts and principles of eco-tourism 3. Understand the role of various stakeholders in ecotourism 4. Learn on alternative tourism and different sustainable practices 5. Gain Knowledge on eco-tourism organizations
23.	20MTAC22B	Specialization Paper Adventure Tourism	1. Knowledge on different types of Adventure tourism. 2. Familiarize about adventure tourism products. 3. Gain knowledge on Land-based adventure activities. 4. Discuss about different Water-based adventure activities. 5. Gain insight on Air -based adventure activities.
24.	20MTAC23A	Specialization Paper MICE and Event Management	1. Knowledge on Concepts of Events 2. Gain inputs on key elements and types of events 3. Understand the practices in MICE and event management

			4. Analyze the responsibilities of meeting planners 5. Apply the key elements in Organizing an event
25.	20MTAC23B	Specialization Paper Strategic Human Resource Development	1. Understand the basic concepts of Human Resource Development 2. Apply knowledge one-HRM 3. Gain knowledge about all the key domains of human resource among students 4. Develop key concepts of employee coaching and stress management 5. Analyze the key issues related to the human elements such as career planning, career motivation and career enrichment.
26.	20MTAC24	Research project	1. Learn the concept of research individually. 2. Familiarize with sampling techniques individually. 3. Exposure on primary and secondary data collection procedure individually. 4. Familiarize with research techniques individually. 5. Interpretation of data collected and report writing individually.
27.	20MTAM01	Department of Tourism Management Multi- Disciplinary Course Cultural Heritage of India	1. Understand our Indian culture & civilization. 2. Familiarize with various religions, shrines& centers. 3. Gain knowledge on cultural and architectural heritage 4. Gain an insight on managing the culture and heritage sites. 5. Understand the cultural diversities of India.
28.	20MTAPC2	Department of Tourism Management Professional Certification IATA/UFTAA - Foundation level	1. Knowledge on Travel Industry and World Geography 2. Aware of various transport systems around the world 3. Knowledge on Hotel industry and Travel formalities 4. Insight into Tour packages and customer service 5. Analyze on the various fare calculations for air travel.
29.	20MTAPC1	Department of Tourism Management Professional Certification CRS – Amadeus	1. Knowledge on Amadeus software 2. Aware of PNR elements and flight information 3. Knowledge on PNR retrieval and itinerary 4. Insight into queues and automated ticket 5. Analyze on the various fare calculations using amadeus

School of Education

Course Outcomes of Courses offered in UG/PG Programmes

Department of Education

B. Ed			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BEDC01	Teacher in Emerging Indian Society	1. Become visionaries of education with sound knowledge of philosophical and sociological foundations of education 2. Integrate the best features of various philosophies and evolve new educational philosophies and apply them in the field of education 3. Analyse and evaluate the diverse needs of learners from the sociological perspective and develop new trends in educational system which are beneficial to the society 4. Act as an agent for the promotion of values, peace and environmental conservation 5. Emerge as efficient social leaders and imbibe a sense of commitment to the establishment of an egalitarian society.
2.	18BEDC02	Introduction to Educational Psychology	1. Apply the knowledge of educational psychology in fostering the growth and development 2. Identify important cognitive stages of development, the typical age range of each stage and the ways the teachers can use that knowledge in curriculum transaction 3. Guide the adolescents to her level in setting appropriate aspiration 4. Understand the nature of personality and foster integrated personality among students 5. help children to overcome conflicts and frustration and apply the strategies to foster mental health and hygiene
3.	18BEDC03	Educational Administration	**1.** Explain the concept of educational administration 2. Understand the role of the headmaster and the teacher in school management 3. Develop communication skills for educational administration 4. Critically analyse role of administrator in the educational institutions 5. Apply the scientific practices of educational management in work situation
18.	18BEDM11	School Subject I: Introduction to Mathematics	1. Describe the nature and scope of mathematics 2. Know how mathematics is correlated with other subjects

		Education	3. List the aims and objectives of teaching mathematics at various levels 4. Realize the importance of history of mathematics 5. Understand and appreciate the contributions of mathematicians 6. Acquire the qualities of a mathematics teacher
19.	18BEDP11	School Subject I: Introduction to Physical Science Education	1. List out the scope of learning physical science 2. Identify the characteristics of a person with scientific attitude and scientific temper 3. Compare the functioning of different scientific organistions 4. Formulate the inter relationship of science and other subjects using illustrations 5. Compose an essay on the biographies of scientists/dramatise the life history of scientists 6. Demonstrate the qualities required for a science teacher
20.	18BEDB11	School Subject I: Introduction to Biological Science Education	1. List out the scope of learning biological science 2. Identify the characteristics of a person with scientific attitude and scientific temper 3. Identify and facilitate development of scientific attitudes in learners 4. Compare the functioning of different scientific organisations 5. Formulate the inter relationship of science and other subjects using illustrations 6. Compose an essay on the biographies of scientists/dramatise the life history of scientists 7. Demonstrate the qualities required for a science teacher 8. To bridge the gap between theory and practice through hands-on experience in teaching biological science
21.	18BEDH11	School Subject I: Introduction to Home Science Education	1. Describe the nature and scope of Home Science 2. Relate the concepts in Home Science related to science and arts 3. Differentiate various areas of Home Science 4. Appreciate the History and Development of Home Science in India 5. Use different strategies in teaching Home Science
22.	18BEDE11	School Subject I: Introduction to History Education	1. Describe the various dimensions of History , its artistic and scientific nature and its unwieldy scope 2. Measure the interrelationship between history and other arts and science subjects 3. Influence others with different aims and

			objectives of history and implement them in the society 4. Overview the historical development of history 5. Integrate the different conceptions of history and evolve the suitable one 6. Prioritize and possess the different qualities essential for an inspiring history teacher
23.	18BEDE11	School Subject I: Introduction to Economics Education	1. Know the importance of Economics in hum welfare 2. Relate economics with other subjects to devel broader perspectives 3. Develop teaching objectives based on Bloom taxonomy 4. Induce the students to know be familiar with t eminent economists 5. Be a professional teacher of Economics
24.	18BEDS11	Introduction to English Education	1. Realize the importance and English education For the development of Indian society 2. Understand the relationship between English and the career development of youngsters 3. Analyse the contribution of great experts to the field of English. 4. Recognize the need to study and practice LSRW In English in English Language teaching 5. Promote peace and values and create awareness about role of English in the society
25.	18BEDG21	School Subject II: Basic Skills of English Language Teaching and Learning	1. Recognize the different components of four basic skills (LSRW) in English Language 2. Familiarize with the testing methods of four basic skills (LSRW) in English Language 3. Practice the book back exercises on four basic skills (LSRW) in English Language teaching 4. Develop communication skills for English language teaching 5. Design activities and task for four basic skills (LSRW) in English Language teaching at school level 6. Practice Language learning across the curriculum
26.	18BEDL1A	Discipline Specific Elective (DSE) –I : Elementary Education	**1.** Be familiar with the characteristics of elementary education envisaged in different education reports and policies **2.** Work on realisation of Universal Elementary Education **3.** Know the constitutional provisions related to elementary education **4.** Apply underlying principles of curriculum development in curriculum construction **5.** Carryout elementary evaluations successfully
27.	18BEDL1B	Discipline Specific	1. Describe the nature and sources of values.

		Elective (DSE) –I : Value Education	2. Classify the values under different types. 3. Develop professional ethics in Educational Institutions 4. Appreciate the values and inculcate across the curriculum 5. Practice values in classroom Teaching
28.	18BEDL1C	Discipline Specific Elective (DSE) –I : Guidance and Counselling	1. Be familiar with the need of guidance and different kinds of Counselling 2. Able to know the basic principles of guidance and counselling 3. Develop competency to meet the needs of the pupils of high and higher secondary classes with regard to educational, personal and vocational guidance 4. Able to organize the guidance and counselling services in secondary schools Will be capable of selecting tests for placement in educational and professional institutions
29.	18BEDL1D	Discipline Specific Elective (DSE) –I : Introduction to Special Education	1. Understand the concept, causes and classification of disabilities. 2. Interpret the policies and access the services and programmes for the children with different disabilities 3. Compare and interpret the characteristics for children with disabilities 4. Equip the necessary skills for identification and learning of children with disabilities 5. Design a check list/teacher made tool to create awareness in the community and media on children with disabilities 6. Initiate resource mobilization for special education
30.	18BEDL1E	Discipline Specific Elective (DSE) –I : Secondary Education	1. Recognize and resolve challenges that occur in the field of Secondary education 2. Describe, explain, and apply principles and strategies to achieve Universalisation of Secondary Education 3. Identify and implement the constitutional provisions for ensuring equity that is inclusive of secondary school children who are culturally, socially and ability diverse 4. Demonstrate the understanding of key performance indicators to enhance the quality of Secondary education 5. Evaluate Secondary education curriculum materials in light of the goals expressed by the Central and State Boards of Education.
31.	18BEDC04	Development of	1. Become aware of the different educational

		Educational System in India	systems in ancient India and cherish the best features of them in life 2. Analyse the accomplishment of different Education Commissions in India before independence and find out the origin of the present educational system 3. Estimate the characteristics of the educational system after independence and develop new innovative thoughts and practices of education for forthcoming generation 4. Sensitize the society about the key role played by the Government bodies in administering the responsibilities for the promotion of better education system 5. Design and suggest innovative plans to the policy makers catering to the present needs of the society 6. Critically analyze the existing challenges in the field of education at different levels and resolve to find solutions
32.	18BEDC05	Learning for Human Development	1. Understand the Learning theories and how to use this knowledge in planning instruction to meet curriculum goals 2. Identify strategies for enhancing students' abilities to use complex cognitive skills 3. Apply the theories of motivation and provide rationale for those you would use in your classroom 4. Analyse the concept of aptitude, interest and attitude and its role in making educational and vocational Choices 5. Motivate to make use of the principles and functions of guidance and counselling to ensure a safe learning environment in school
19.	18BEDC06	Educational Evaluation and Assessment	1. Compare and contrast the concepts and types of measurement, assessment and evaluation. 2. Design and use different tools of evaluation 3. Construct test items to measure objectives belonging to various cognitive levels. 4. Construct a standard achievement test and interpret the test results 5. Describe various measures of central tendency and variation and their application 6. Identify and use of various innovations and reforms in examination system.
20.	18BEDC07	Perspectives in Inclusive Education	1. Understand the changing practices in education of children with disabilities. 2. Interpret the policies and access the educational needs of children with different disabilities

			3. Compare and interpret the specifics for children with disabilities 4. Equip the necessary skills for universal design for learning of children with disabilities 5. Design a check list/teacher made tool to mainstream children with disabilities in regular schools 6. Initiate resource mobilization for inclusive education
21.	18BEDM12	Methods and Techniques of Teaching Mathematics	**1.** Develop competency in teaching skills **2.** Choose appropriate methodology for teaching mathematics 3. Analyse various techniques for teaching mathematics 4. Plan daily lesson for teaching mathematics 5. Design yearly, term, monthly and weekly plan 6. Construct auto instructional material for teaching mathematics
22.	18BEDP12	Methods and Techniques of Teaching Physical Science	1. Apply the micro teaching skills in their teaching sessions 2. Practice the different methods and techniques of teaching 3. Select and plan the academic activities for an year , month and week 4. Compare and contrast the different approaches in lesson planning 5. Design different individualised instruction modules
23.	18BEDB12	Methods and Techniques of Teaching Biological Science	1. Identify the components of different micro teaching skills **2.** Provide constructive, focused feedback to fellow participants on micro training activities • reflect on and assess micro training as a teacher development tool. 3. Apply the micro teaching skills in their teaching sessions 4. Practice the different methods and techniques of teaching 5. Select and plan the academic activities for an year , month and week 6. Compare and contrast the different approaches in lesson planning 7. Design different individualised instruction modules
24.	18BEDH12	Methods and Techniques of Teaching Home Science	1. Practice of Microteaching Skills 2. Apply various instructional methods and approaches of teaching Home Science 3. Use various techniques in teaching of Home Science

			4. Use of various resources for Teaching of Home Science 5. Critically analyze the Home Science textbook of the Higher Secondary level
25.	18BEDI12	Methods and Techniques of Teaching History	1. Apply the acquired skills involved in the teaching of history in the real classroom teaching learning process 2. Practise and adopt suitable methods of teaching to enhance the knowledge and skill of the learners 3. Increase time sense by adopting different techniques and create interest in the subject called history to feel the reality of the subject 4. Plan and organize various seminars, symposium and many more activities to provide practical experience 5. Construct different plans for the preparation of classroom activities for the whole academic year 6. Promote self learning in the classroom among the learners by the preparation of the self learning materials
26.	18BEDE12	Methods and Techniques of Teaching Economics	1. Successfully apply various teaching skills Economics teaching and learning 2. Assess the needs of the learner and choo appropriate pedagogy 3. Be a continuous learner in the field of teachi economics 4. Design instructions based on Herbartian steps 5. Be capable of designing individualised instructior plans
27.	18BEDS12	Approaches, Methods and Techniques of Teaching English	1. To develop competence in teaching skills and techniques. 2. Practice skills in planning their lesson with reference to contents. 3. Analyse various techniques of teaching English. 4. Prepare daily lessons for teaching English. 5. Develop skill in preparing Individualised-instruction for teaching English.
28.	18BEDG22	Teaching English as a Second Language	1. Understand the difference between ESL and EFL 2. Assess the characteristics of English langua learners 3. Analyze the instructional strategies that suppo language development 4. Exercise the technologies related to Engli Language Learning 5. Acquaint with testing and evaluation in ESL 6. Practice andragogy in classroom teaching

29.	18BEDC08	Teacher Behaviour **(Self study)**	1. Observe, analyze and document student behavior to match an appropriate intervention strategy to change behavior in a desired direction. 2. Establish classroom procedures and expectation (rules) to promote a positive, effective and efficient learning environment 3. Construct the organization of a classroom schedule/time management plan that includes various content areas, instructional strategies, grouping strategies 4. Experiment with new and innovative approaches to planning and teaching. 5. Analyze a given classroom situation for legal, ethical and professional issues and concerns, by applying legal, ethical, and professional reactions to the situation and provide resolutions to align the classroom
30.	18BEDM13	Curriculum and Resources in Mathematics Education	1. Understand the principles in curriculum development 2. Choose suitable resources for enhancing learning 3. Organize co-curricular activities related to mathematics 4. Collect books for enriching a mathematics library 5. Construct tests to measure the achievement test in mathematics 6. Judge the quality of a test
31.	18BEDP13	Curriculum and Resources in Physical Science Education	1. Identify the components of different micro teaching skills 2. Operate the different educational technology gadgets 3. Design and arrange a science laboratory and prepare the registers required for a lab 4. Demonstrate the ways of administering first aid 5. Catalogue the periodicals and books in the library 6. Construct and validate diagnostic test and achievement test
32.	18BEDB13	Curriculum and Resources in Biological Science Education	1. Identify the components of different micro teaching skills 2. Operate the different educational technology gadgets 3. Design and arrange a science laboratory and prepare the registers required for a lab 4. Demonstrate the ways of administering first aid 5. Catalogue the periodicals and books in the library 6. Construct and validate diagnostic test and achievement test
33.	18BEDH13	Curriculum and	1. Describe the concept and principles of Curriculum construction

		Resources in Home Science Education	2. Develop teaching-learning material for teaching Home Science 3. Familiarize with laboratory organization and administration 4. Identify different resources related to library 5. Prepare objective based test items to assess the achievement and progress of pupils
34.	18BEDI13	Curriculum and Resources in History Education	1. Analyse curriculum for different levels of education and emerge as expert curriculum designers 2. Suitable resources for enhancing teaching learning process in history 3. Collect various materials needed for establishing history room and arrange it in a proper manner 4. Promote the library reading among the future citizens to widen their knowledge in the area of history 5. Construct different test tools and judge the quality of a test with the help of the tool to measure the achievement test in economics
35.	18BEDE13	Curriculum and Resources in Economics Education	1. Be familiar with the principles of curriculu construction 2. Organize the economics content for smoother conte delivery 3. Systematize and facilitate the students wi economics room 4. Facilitate the students to make use of the libra effectively 5. Apply various strategies of evaluation to impro classroom teaching
36.	18BEDS13	Curriculum and Resources in English Education	1. Acquire knowledge about the curriculum development in English. 2. Acquaint with the various teaching learning materials in ELT 3. Understand the role of Language lab and Library in the teaching of English. 4. Get thorough with the purpose of Evaluation and develop the skill of tool construction 5. Prepare and practice tools to evaluate the students
37.	18BEDG23	Enriching Language learning through Information and Communication Technology (ICT)	1. Describe various technological resources in Language Learning 2. Structure the instructional design for CALL Program 3. Identify and demonstrate Web Applications for Language Teaching 4. Evaluate critically the role of Social networks in

			language learning 5. Publish one video lesson in youtube.
38.	18BEDL2A	Discipline Specific Elective(DSE)-II : Pre-Primary Education	1. Acquire understanding of young children's development and learning 2. Create and evaluate the indoor and outdoor physical and social environment in a preschool. 3. Acquire the teaching skills required for an effective organisation, conduction and evaluation of teaching in a pre primary level 4. Train the students to set up pre-schools under self employment schemes. 5. Communicate effectively in various ways in the context of early childhood settings.
39.	18BEDL2B	Discipline Specific Elective(DSE)-II : Life Skills for Student Teachers	1. Develop life skills education among students 2. Integrating life skills and values in school Curriculum 3. Identify the components of different Managerial skills 4. Apply the strategies for self-motivation
40.	18BEDL2C	Discipline Specific Elective(DSE)-II : Introduction to Learning Disability	**1.** Be familiar with the services available for Learning Disability at national and international level. **2.** Be familiar with factors leading to Learning disability **3.** Be familiar with the cognitive process involved in learning **4.** Able to identify the types of Learning disability 5. Able to find out the nature of difficulties among Learning disabled children in Oral and written language.
41.	18BEDL2D	Discipline Specific Elective(DSE)-II : Human Rights Education	1. Translate the theories of human rights in the class room situations 2. Create awareness about and interpret the human rights promoted by International and National documents 3. Appraise the efforts of international, national and state institutions to enforce human rights 4. Analyze the issues related to human rights and try for its redressal 5. Promote awareness on human right through various methods and strategies
42.	18BEDL2E	Discipline Specific Elective(DSE)-II : Alternative Education	1. Be familiar with the need and scope of alternative and adult education 2. Will be capable of designing lifelong education to learners according to their needs, aptitude and

			convenience 3. Facilitate openness in learning system with due freedom and flexibility 4. Able to work upon removal of illiteracy 5. Will be able to be a key worker on realizing the goals of adult education
43.	18BEDO01	Montessori Education	1. Understand the philosophy of Montessori education. 2. Interpret the principles and Montessori education practices 3. Compare and interpret the characteristics of independence and absorbent mind and its significance 4. Equip the necessary skills for identification of sensitive period and movement in education 5. Design a check list/teacher made tool to assess the healthy practices in children 6. Initiate resource mobilization for child care
44.	18BEDEP1	Reading and Reflection on Text	1. Read different types of genres 2. Use different reading techniques during reading 3. Relate readings with personal experience 4. Teach english across the curriculum
45.	18BEDEP2	Drama and Art in Education	1. Describe the development of art and drama in education 2. Link learning task and drama 3. Distinguish and associate various art forms w lessons 4. Enact in classroom teaching 5. Integrate various forms of arts in classroom a community
46.	18BEDC09	Gender ,School and Society	1. Be a good social observer and work upon gender sensitivity 2. Interpret legislations of the Indian Constitution promoting gender equality 3. Adopt different strategies to assess the curriculum and the textbooks 4. Plan, design and implement advocacy programmes for gender equality at school and community level by involving stakeholders 5. Monitor and evaluate the programmes promoting Gender Equality
47.	18BEDC10	Education for Health	1. Develop the ability to use various methods a

		and Nutrition	techniques for teaching health education 2. Design individualized eating plans utilizing d planning principles and the food guide pyramid 3. Acquaint the students with ways and means protect our environment 4. Practice yoga to enhance abilities of body and mind 5. Describe how nutrition and lifestyle choices impa the life cycle.
48.	18BEDM14	Professionalising Mathematics Education	1. Describe the steps in content analysis 2. Critically analyse the quality of mathematics textbook 3. Develop e-content lesson for any topic 4. Explain the types of research 5. Develop research attitude among students 6. Organize co-curricular activities in mathematics
49.	18BEDP14	Professionalising Physical Science Education	1. Analyse the content and pedagogy of text books 2. Analyse and evaluate text books 3. Design and develop e - content material 4. Conduct an action research 5. Organise science exhibitions and science fairs
50.	18BEDB14	Professionalising Biological Science Education	1. Describe the importance of pedagogical content analysis 2. Compare and interpret the content of different boards of education 3. Analyse and evaluate text books 4. Design and develop e - content material 5. Conduct an action research 6. Organise science exhibitions and science fairs
51.	18BEDH14	Professionalising Home Science Education	1. Analyse the school curriculum of Home Science 2. Prepare anyone e-lessons of Home Science from school Text book 3. Develop e-content on any one school topic of home science 4. Experiment small projects in school 5. Develop few co-curricular activities in Home Science
52.	18BEDI14	Professionalising History Education	1. Attempt the pedagogical analysis and suggest improvement in it 2. Critically analyse the quality of history textbooks at all levels of education 3. Develop e-content lesson for any topic either at school level or higher education level 4. Develop research attitude among the future citizens of the country 5. Undertake any type of research and recommend

			the findings for the policy making 6. Stimulate the interest among the future citizens to involve themselves in the co- curricular activities
53.	18BEDE14	Professionalising Economics Education	1. Carry out pedagogical analysis 2. Be aware of the qualities of an economics text book 3. Be capable of developing e-content in the field economics 4. Carryout action research to improve the educational setting to foster economics teaching and learning 5. Handle special problems in teaching economics rural schools
54.	18BEDS14	Professionalising English Education	1. Analyze the content of the text book critically 2. Acquire with pedagogical analysis 3. Familiarize with e-content development and module preparation 4. Develop fluency in english through co-curricular activities 5. Gain the knowledge to do action research and interpret it
55.	18BEDG24	English Language Teaching in India	1. Describe the historical background of English in India 2. Sort the current status of English in India 3. Tell stories to develop language skills. **4.** Compare the Approaches of English Langua Teaching in India 5. Critically evaluate the pedagogy of English langua teaching in India
56.	18BEDEP3	ICT in Education	1. Identify different ICT gadgets 2. Write essays on Computer Education and Computer Based Education 3. Select suitable media for the subject content 4. Use ICT in Classroom teaching
57.	18BEDEP4	Understanding the self	1. Explore various aspects of own self 2. Understand the concept of self development and self efficacy. 3. Self expression in the form of oral as well as written. 4. Develop holistic and integrated concept of self through workshops. 5. Becoming the change agent – designing and leading change / social action

M. Ed			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MEDC01	Philosophical and Sociological Perspectives of Education	1. Induce philosophical quest among the students so as to mould them into visionaries of education with sound knowledge of philosophical foundations and value based responsible citizens of tomorrow 2. Appreciate and apply the contributions made by the eastern and western philosophers from metaphysical, epistemological and axiological dimensions and realise its implications in the context of practical life 3. Integrate the best features of various philosophies and invent new educational philosophies in order to cater to the needs of the modern society 4. Assess the instrumental role of education utilizing the help of social variables in uplifting the society to proceed in the path of bringing social and economic change 5. Analyse and evaluate the diverse needs of learners from the sociological perspective and develop new trends in educational system which are beneficial to the society **6.** Sensitize the future generation about our great cultural heritage thereby adapting and moulding them to preserve our culture cherishing the various forms of arts and other initiatives at the global level
2.	20MEDC02	Advanced Educational Psychology	1. Understand the science of Psychology a Educational Psychology. 2. Interpret the aspects of Human development 3. Compare and interpret the theories of cogniti ,personality and psycho social development 4. Equip the necessary skills for identification children with learning disabilities 5. Design a check list/teacher made tool administer a Personality test
3.	20MEDC03	Introduction to Educational Research and Statistics	1. Independently search for, integrate and critically assess research information within the field of education. 2. Design different data collection methods and conduct an indepth interview, a focus group, qualitative case study and a mixed method

			study. 3. Construct instruments for the measurement of different psychological, sociological, technological and other educational factors. 4. Enter, analyse and interpret the results of the data using SPSS and Microsoft Excel. 5. Apply basic concepts in Statistics to educational research.
4.	20MEDC04	Higher Education –A Global Perspective	1. Explore global scenario of post- secondary education 2. Develop deep insight into governance, leadership, policy making, management and a critical approach to the global environment 3. Sustain a research base on higher education focusing on higher education futures and alternative perspectives 4. Engage academically with stakeholders of higher education including local and global communities regarding practices towards societal transformation 5. Analyze the role of higher education for sustainable development
5.	20MEDC05	Human Resource and Capacity Development in Higher Education	1. Describe the different components of knowledge transfer 2. Organize development activities 3. Practice communication Skills and public speaking Skills 4. Develop institutional and organizational capacity 5. Critically analyse the capacity development programmes
6.	20MEDC06	Advanced Educational Research and Statistics	1. Choose appropriate quantitative or qualitative method to collect data 2. Write a research proposal suitable for submission to a research funding body 3. Carry out independent research using a range of research designs and methods 4. Maintain respect for individual research contributions and intellectual property rights and demonstrate ethical behavior 5. Interpret and present the results of an independently conducted statistical analysis
7.	20MEDC07	Yoga and Health Education	1. Learn good health habits and health Services. 2. Create awareness on the need and

			importance of physical education. 3. Implement difference methods of learning and teaching physical activities. 4. Learn Basic Skills, Rules and Regulations of few Games. 5. Emerge as the best yoga practitioner as well as yoga trainer
8.	20MEDI01	**Inter Disciplinary Course** Environmental Education	1. List the aims and objectives of environmental education 2. Acquire the basic principles and practices of the environmental education at secondary and higher secondary level 3. Realise the importance of natural resources and the role of an individual and associated problems 4. Acquire the knowledge of ecosystem and its importance in environmental education 5. Describe various measures for preventing and control of pollution
9.	20MEDC09	Curriculum Development and Transaction	1. Understand the concept of curriculum a identify the components of curriculum. 2. Interpret the principles and bases of curriculu development 3. Compare and interpret the models curriculum development approach 4. Equip the necessary skills for curriculu planning. 5. Design a check list/teacher made tool to asse the cognitive abilities, affective learning a motor abilities awareness 6. Initiate resource mobilization for ICT curriculum development
10.	20MEDC10	Educational Planning and Policy Making	1. Describe the purpose of Educational planning in terms of national and Community needs 2. Use variety of administrative strategies in Educational Institutions 3. Analyse educational policy , planning and finance 4. Describe the contribution of five year plans in India and their implications in the field of education 5. Describe the role of World Bank in Educational Policy and Financing in India
11.	20MEDC11	Teacher Education	1. Acquire the qualities of a global teacher

		(Self Study)	educators and administrators to changes in the areas of teacher education 2. Describe the need, concept and objectives of teacher education 3. Understand the structure, administration, curriculum methodology and evaluation procedure of pre-service and in service teacher training 4. Identifies and implements various approaches used for teachers, teacher educators and educational administrators 5. Designs trends in teacher education and develops competency in implementing the policies regarding teacher education in india
12.	20MEDCI2	Gender Issues and Promotion of Gender Equality	1. Implement the theories of gender equality and avoid gender biases in the class room situations 2. Interpret legislations of the indian constitution promoting gender equality 3. Arrange for counselling and extracurricular activities to promote gender equality at home and the community 4. Adopt different strategies to assess the curriculum and the textbooks 5. Plan, design and implement advocacy programmes for gender equality at school and community level by involving stakeholders 6. Monitor and evaluate the programmes promoting gender equality
13.	20MEDC13	Educational Management	**1.** Explain the concept of educational administration 2. Understand the role of the headmaster and the teacher in school management 3. Develop communication skills for educational administration 4. Critically analyse role of administrator in the Educational Institutions 5. Apply the scientific practices of educational management in work situation
14.	20MEDC14	Inclusive Education	1. Understand the changing practices in education of children with disabilities. 2. Interpret the policies and access the educational needs of children with different disabilities 3. Compare and interpret the specifics for children with disabilities 4. Equip the necessary skills for universal design for learning of children with

			disabilities 5. Design a check list/teacher made tool to mainstream children with disabilities in regular schools 6. Initiate resource mobilization for inclusive education
15.	20MEDC15	ICT in Education	1. Identify different ICT gadgets 2. Write essays on Computer Education and Computer Based Education 3. Select suitable media for the subject content 4. Use ICT in Classroom teaching

Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PHED01	Advanced Educational Research Methodology and Statistics	1. Independently search for research informati in education 2. Identify and select suitable research proble and provide justification 3. Apply suitable research methods a techniques for data collection. **4.** Construct and validate research tools for t measurement of different psychologic sociological and technological variables **5.** Use suitable statistical methods and packag for analysis of research data
2.	19PHED02	Emerging Trends In Indian Education	1. Find out ways to solve the challenges in Education 2. Take rigorous steps in eradicating illetracy 3. Equip themselves with recent technologies in education 4. Gain knowledge on issues related to Women's Education 5. Familiarise with reforms in evaluation
3.	19PHED03A	Emerging Trends In Philosophy	1. Understand thoroughly the concept, meaning and importance of philosophy 2. Equip with the knowledge of various schools of philosophy 3. Find out the different methods and strategies for teaching philosophy 4. Develop a critical mind to do further research in the field of philosophical approach.

4.	19PHED03B	Digital Intelligence and Mental Health	1. Equip with knowledge of digital tools and digital learning objects used in education 2. Understand thoroughly the concept, meaning and theoretical framework of Digital Intelligence 3. Equip with knowledge about learner's mental health and factors affecting learner's mental health 4. Develop sensitivity towards the major health issues of young adults 5. Develop skills in observing, analyzing and adopting various strategies to deal with the health issues of the learner
5.	19PHED03C	Professional Commitment and Well- Being	1. Understand thoroughly the concept, meaning and importance of professional Commitment and well- being 2. Equip with the knowledge of various theories and models of well- being 3. Find out the strategies for the teacher well-being 4. Develop a critical mind to do further researches in the field of Professional Commitment and well- being
6.	19PHED03D	Artificial Intelligence and Professional Competence of Teachers	1. Understand thoroughly the concept, meaning and importance of Artificial Intelligence and professional competency 2. Find out strategies for Artificial Intelligence enabled classroom 3. Understand the role of teachers in make use of Artificial intelligence in classrooms 4. Develop awareness of Artificial Intelligence in evaluation and research 5. Solve classroom issues related to Artificial Intelligence
7.	19PHED03E	Physics Competence for Competitive Exams	1. To analyse the content in physics text books of 11th and 12th standard 2. To practice the advance techniques in Physics teaching learning 3. To analyze the physics competency with reference to Psychological aspects of student's behaviour 4. To identify the competitive and entrance exams after 12thstandard 5. To practice assessment system in competitive and entrance exams after 12thstandard
8.	19PHED03F	Information and	1. To apply their ICT skills and knowledge to

		Communication Technology in Education	their learning in other areas. 2. To analyse the Learning Support System used in Biology teaching and learning 3. To analyse the communication and interaction process in using ICT 4. To practise the various ICT tools for the students living in high altitude 5. To realise the importance of using ICT in school education

Special Education

B. Sc			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BSEC01	Developments in Special Education	1. Have an overview on the concept of Special Education 2. Define different categories of disabilities 3. Understand the educational services for children with disabilities 4. Be aware of National Policies and Acts for PWD'S 5. Focus the present trends and future perspectives in Education and Special Education.
2.	18BSEC02	Specific Learning Disabilities	1. Identify children with specific learning disabilities based on characteristics 2. Understand the impact of neuro-development system on learning 3. Gain an overview of the problems in reading, writing and math 4. Application of tests / tools suitable to assess specific problems in academics among children 5. Counsel parents, children and teachers for appropriate intervention and management.
3.	18BSEC03	Visual Impairment	1. Become Braille Transcribers and Experts in Tactile Learning Method 2. Interpret the Implication of Visual Impairment for Education based on Eye Report. 3. Counsel Visually Impaired Persons 4. Become Orientation & Mobility Instructor

			for Visually Impaired 5. Scope to become a Special Educator in Visual Impairment
4.	18BSEC04	Assessment and Training of Low Vision	1. Develop different reading, writing materials for low vision children 2. Demonstrate functional vision assessment for low vision children 3. Sort out different kinds of low vision devices 4. Teach orientation and mobility skills to low vision children manage low vision children in classroom
5.	18BSEC05	Visual Impairment - Practicum	1. Able to prepare and transcribe braille reading and writing materials to children with visual impairment 2. Train the visually impaired children with orientation and mobility techniques 3. Maintain different records for visually impaired children 4. Set up resource centre for the visually impaired 5. Scope to become a special educator in visual impairment
6.	18BSEC06	Hearing Impairment	1. Understand the characteristics of children with hearing impairment 2. Acquire skills for identifying, assessing and rehabilitating children with hearing impairment 3. Assess and apply intervention strategies to enhance learning skills of children with hearing impairment 4. Familiarize with assistive devices in teaching children with hearing impairment 5. Suggest appropriate educational and vocational placement and curricular strategies for students with hearing impairment
7.	18BSEC07	Early Childhood Special Education	1. Understanding of Early Childhood Education and Special Education 2. Assess milestones of development across physical, motor, cognitive, emotional and social areas during early childhood years 3. Demonstrate skills in concept training and curricular adaptation 4. Plan and implement individualized need based programmes for children with special needs

			5. Familiarize in organization of various programmes and records maintaining
8.	18BSEC08	Hearing Impairment - Practicum	1. Screen and identify children with hearing impairment in schools and community 2. Assess and suggest assistive devices for the purpose of enhancing hearing ability 3. Prepare case study and discuss assessment data in terms of speech, language and communication abilities 4. Implement techniques of teaching speech, language and communication for children with hearing impairment 5. Develop and use suitable teaching learning materials for children with hearing impairment in various setting
9.	18BSEI04	DSE –III -Computer Application in Special Education	1. Acquire skills in using computers for teaching and learning 2. Prepare excel sheet for a given data. 3. Develop powerpoint presentation for seminar 4. Use internet and e-mail for learning and communication 5. Acquire skills in using special software for children with special needs.
10.	18BSEC09	Motor Disability	1. Understand the anatomy and physiology of human body 2. Acquire skills in identification of children with motor disabilities for referral 3. Develop skills in counseling and guidance of persons with motor disabilities 4. Familiarize with techniques of adaptation of aids, equipment and the environment for creating accessible atmosphere 5. Become aware of various employment opportunities and the role of special employment exchange for persons with movement disorder.
11.	18BSEC10	Community Based Rehabilitation	1. Become familiar with organization structure of CBR Programme. 2. Acquire skills in the implementing CBR Programmes 3. Get to know the economic rehabilitation of CBR 4. Case completion analysis for in-depth experiential learning 5. Work out the monitoring mechanism of Community Based Rehabilitation Programmes.
12.	18BSEC11	Introduction to Multiple Disabilities	1. Identify and assess children with Multiple Disabilities 2. Decide on early intervention services in

			reducing the impact of disability 3. Understand the importance of Early intervention and its significance in education 4. Suggest appropriate educational provision for children with Multiple Disabilities 5. Use suitable aids and equipment for education and rehabilitation of children with Multiple Disabilities
13.	18BSEC12	Intellectual Disability	1. Understand the characteristics of children with Intellectual Disability 2. Acquire skills in screening, assessing and rehabilitating children with Intellectual Disability 3. Develop and implement IEP and group teaching methods for children with Intellectual Disability 4. Apply behavior modification programme for children with Intellectual Disability 5. Familiarize with various vocational training options for persons with Intellectual Disability
14.	18BSEC13	Speech and Language for Children with Special Needs	1. Acquire knowledge on characteristics of normal speech and language 2. Aware of various approaches and techniques of teaching language 3. Get acquainted with the problems of children in speech and language 4. Analyze critically and assess speech and language of children with special needs 5. Teach speech and language to children with special needs
15.	18BSEC14	Intellectual Disability - Practicum	1. Screen and identify children with Intellectual Disability in the community 2. Become aware of the behaviour modification techniques and the investigative procedure. 3. Prepare IEP and Intervention strategies for children with Intellectual Disability 4. Apply the psycho educational assessment using kit developed 5. Prepare and present case study report
16.	18BSEC15	Assistive Technology for Persons with Disabilities (Self Study)	1. Understand the importance of Assistive Devices for Independent Living 2. Use of Assistive Technology for screening and identification of children with disabilities 3. Develop skills in application of Assistive Technology for assessment of children with disabilities

			4. Become aware of interpreting the report from assistive devices 5. Acquire skills in application of Assistive Technology for communication and daily living skill
17.	18BSEC17	Autism Spectrum Disorder	1. Acquire skills to identify and assess children with Autism Spectrum Disorder 2. Exhibit skills to teach and train children with Autism Spectrum Disorder effectively 3. Use different assessment tools in identification and assessment 4. Apply suitable therapeutic procedures used in children with autism. 5. Identify apropriate services to different categories of children with autism
18.	18BSEC18	Management in Special Education and Rehabilitation	1. Acquire skills in management of Special Education Institutions 2. Comprehend and analyze the process of management in an institutional setting 3. Preparation of budget using basic accounting skills in project preparation 4. Prepare present and analyze case study reports 5. Create awareness on various welfare schemes and polices for persons with disabilities
19.	18BSEC19	Individualized Educational Plan – Practicum	1. Acquire skills in Management of Children with special needs 2. Be familiar with therapeutic and counseling technique 3. Prepare individual case profile and reporting 4. Preparation of teaching learning material for various disabilities 5. Familiarize in universal design on environment and instruction
20.	18BHDI03	DSE III – Education and Rehabilitation Approaches for Persons with Disabilities	1. Have an overview on the concept of special education 2. Acquire knowledge on different categories of disabilities 3. Understand the educational services for children with disabilities 4. Be aware of national policies and acts for pwd's 5. Focus the present trends and future perspectives in education and special education.
21.	18BSEO01	Generic Elective Course - Perspectives in	1. Outline the concept, nature and characteristics of different categories of disabled 2. Facilitate in the educational programmes for

		Special Education	the differently abled 3. Sensitize the government policies, acts programmes 4. Refer differently abled to educational programmes 5. Refer to agencies serving for the differently abled
22.	18BSEV01	Value Added Course - Orientation to Sign Language	1. Outline the Concept, characteristics and features of sign language 2. Get knowledge and competence in use of sign language 3. Acquire knowledge on primary and basic concept of sign 4. Facilitate the use of signs for grammatical words and marks 5. Sensitize and develop the skill of interpretation on sign language

B. Ed			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BDSC01	Human Growth and Development	1. Able to identify any discrepancy in the mile stones of development among children 2. Identify the developmental delay in children 3. Apply the theories of development in fostering the growth and development of children 4. Screen the new born for congenital anomalies(using APGAR score, reflexes) and monitor neuro perceptual development 5. Provide a stimulating environment for the growing child(for all round development) 6. Be able to identify the factors influencing the developments of the child and work upon them to foster cognitive development of the child. 7. Train on life skills and independent living and provide career choices during transitions into adulthood
2.	18BDSC02	Introduction to Sensory Disabilities	1. Diagnose the sensory impairments and educate the students with sensory loss 2. Plan and implement strategies for students with VI/HI 3. Carry out functional assessment for VI/HI and foster the effective use of residual

			vision/hearing 4. Intervene students with deaf blindness on functional academic skills 5. Choose appropriate mode of communication for children with visual impairment/HI/deafblindness and foster communication skills using necessary gadgets and train VI/HI/Deafblind children on mobility skills
3.	18BDSC03	Introduction to Neuro-Developmental Disabilities	1. Categorize the associated conditions with learning disability and can guide the differently abled with the services available for hem at national and international level. 2. Provide intervention for the children with learning disability and develop Individualized Education Plan (IEP). 3. Catalog the associated conditions with intellectual disability and can assess the IQ level of intellectual disabled. 4. Guide on Life skill education, Vocational training and career opportunitiesand Intervene Children with Intellectual Disability. 5. Expertise in Instructional approaches for children with Autism Spectrum Disorder.
4.	18BDSC04	Introduction to Locomotor and Multiple Disabilities	1. Categorize different types loco motor disabled students in schools and do the basic assessment with the help of checklist. 2. Able to guide and assist the caregivers parents to receive therapeutical intervention, and devices. Develop IEP according the Childs level. 3. Classify and identify the students according to their disability level and plan IEP, guiding for classroom arrangement and modifications if needed 4. Classify the students according to the disability wise and assisting the regular teacher to understand the implications. 5. Disseminate the knowledge about the devices available for loco motor the sources of availability and various schemes and legislations available for PWD's
5.	18BDSM11	School Subject I: Introduction to Mathematics Education	1. Describe the nature and scope of mathematics 2. Know how mathematics is correlated with other subjects

			3. List the aims and objectives of teaching mathematics at various levels 4. Realize the importance of history of mathematics 5. Understand and appreciate the contributions of mathematicians 6. Acquire the qualities of a mathematics teacher
6.	18BDSP11	School Subject I: Introduction to Physical Science Education	1. List out the scope of learning physical science 2. Identify the characteristics of a person with scientific attitude and scientific temper 3. Compare the functioning of different scientific organistions 4. Formulate the inter relationship of science and other subjects using illustrations 5. Compose an essay on the biographies of scientists/dramatise the life history of scientists 6. Demonstrate the qualities required for a science teacher
7.	18BDSB11	School Subject I: Introduction to Biological Science Education	1. List out the scope of learning biological science 2. Identify the characteristics of a person with scientific attitude and scientific temper 3. Identify and facilitate development of scientific attitudes in learners 4. Compare the functioning of different scientific organisations 5. Formulate the inter relationship of science and other subjects using illustrations 6. Compose an essay on the biographies of scientists/dramatise the life history of scientists 7. Demonstrate the qualities required for a science teacher 8. To bridge the gap between theory and practice through hands-on experience in teaching biological science
8.	18BDSH11	School Subject I: Introduction to Home Science Education	1. Describe the nature and scope of Home Science 2. Relate the concepts in Home Science related to science and arts 3. Differentiate various areas of Home Science 4. Appreciate the History and Development of Home Science in India 5. Use different strategies in teaching Home

			Science
9.	18BDSI11	School Subject I: Introduction to History Education	1. Describe the various dimensions of History , its artistic and scientific nature and its unwieldy scope 2. Measure the interrelationship between history and other arts and science subjects 3. Influence others with different aims and objectives of history and implement them in the society 4. Overview the historical development of history 5. Integrate the different conceptions of history and evolve the suitable one 6. Prioritize and possess the different qualities essential for an inspiring history teacher
10.	18BDSS11	Introduction to English Education	1. Realize the importance and English education For the development of Indian society 2. Understand the relationship between English and the career development of youngsters 3. Analyse the contribution of great experts to the field of English. 4. Recognize the need to study and practice LSRW In English in English Language teaching 5. Promote peace and values and create awareness about role of English in the society
11.	18BDSSV1	Specialization: Identification of Children with Visual Impairment and Assessment of Needs	1. Identify the congenital visual defects among children 2. Familiar with common eye disorders and their educational management 3. Find out and work upon the educational needs of the visually impaired children 4. Will locate the effect of VI on growth and development and help in the rehabilitation to foster all round development of visually impaired children 5. Make use of results of psychological assessments in educational setting 6. Manage the additional disabilities in visual impaired children in educational setting
12.	18BDSSH1	Specialization: Identification of Children with Hearing Impairment and Assessment of Needs	1. Utilize behavioural technique in screening for hearing loss 2. Interpret audiograms and assess the educational needs of children with different types and degrees of hearing loss

			3. Compare and interpret the language development in hearing impaired children 4. Describe the process of speech production 5. Evaluate the speech of children with hearing impairment and design teacher made tests to identify the educational needs of individuals with hearing impairment
13.	18BDSEV1	Discipline Specific Elective(DSE) I: Braille and Assistive Devices	1. Be able to analyze the impact of blindness 2. Be able to transcribe print in to Braille format by using Braille Slate as well as with Mechanical Brailler in both Regional and English language with contractions 3. Be familiar with the different types of devices available for children with visual impairment 4. Apply the knowledge of Taylor frame and abacus to teach visually impaired students, teachers, parents and to the caregivers. 5. Be familiar with various schemes and legislations available for PWDs
14.	18BDSEH1	Discipline Specific Elective (DSE) I: Augmentative and Alternative Communication	1. Demonstrate the responsiveness of communication partners on the development of functional communication for AAC users. 2. Describes roles of communication for individuals' growth and participation in daily life. 3. Explain the assessment and selection process relative to AAC and identify the current communication ability and needs of the person. 4. Considers the unique nature of individuals' situation and abilities Describe principles and terminology related to augmentative and alternative communication (AAC). 5. Expertise in service delivery options and strategies with a strong knowledge on multifaceted use of AAC methods.
15.	18BDSC05	Learning, Teaching and Assessment	1. Apply the theories of learning in teaching the children 2. Make use of theories of intelligence to foster intellectual development of the children 3. Motivate the children on appropriate methods of learning 4. Grade the attention of the students and foster self management 5. Carryout appropriate assessment in educational set up to enhance learning and assess the diversity in learners and plan

			suitable pedagogy
16.	18BDSC06	Contemporary India and Education	1. Induce philosophical quest among the students so as to mould them into visionaries of education with sound knowledge of philosophical foundations and value based responsible citizens of tomorrow. 2. Integrate the best features of various philosophies and apply them in the field of special education. 3. Analyse and evaluate the diverse needs of learners from the sociological perspective and develop new trends in educational system which are beneficial to the society. 4. Interpret the policies and access the educational needs of children with disabilities. 5. Familiarize themselves with educational provisions and amendments in the indian constitution.
17.	18BEDM12	Methods and Techniques of Teaching Mathematics	**1.** Develop competency in teaching skills **2.** Choose appropriate methodology for teaching mathematics 3. Analyse various techniques for teaching mathematics 4. Plan daily lesson for teaching mathematics 5. Design yearly, term, monthly and weekly plan 6. Construct auto instructional material for teaching mathematics
18.	18BEDP12	Methods and Techniques of Teaching Physical Science	1. Apply the micro teaching skills in their teaching sessions 2. Practice the different methods and techniques of teaching 3. Select and plan the academic activities for an year , month and week 4. Compare and contrast the different approaches in lesson planning 5. Design different individualised instruction modules
19.	18BEDB12	Methods and Techniques of Teaching Biological Science	1. Identify the components of different micro teaching skills **2.** Provide constructive, focused feedback to fellow participants on micro training activities • reflect on and assess micro training as a teacher development tool. 3. Apply the micro teaching skills in their teaching sessions 4. Practice the different methods and

			techniques of teaching 5. Select and plan the academic activities for an year , month and week 6. Compare and contrast the different approaches in lesson planning 7. Design different individualised instruction modules
20.	18BEDH12	Methods and Techniques of Teaching Home Science	1. Practice of Microteaching Skills 2. Apply various instructional methods and approaches of teaching Home Science 3. Use various techniques in teaching of Home Science 4. Use of various resources for Teaching of Home Science 5. Critically analyze the Home Science textbook of the Higher Secondary level
21.	18BEDI12	Methods and Techniques of Teaching History	1. Apply the acquired skills involved in the teaching of history in the real classroom teaching learning process 2. Practise and adopt suitable methods of teaching to enhance the knowledge and skill of the learners 3. Increase time sense by adopting different techniques and create interest in the subject called history to feel the reality of the subject 4. Plan and organize various seminars, symposium and many more activities to provide practical experience 5. Construct different plans for the preparation of classroom activities for the whole academic year 6. Promote self learning in the classroom among the learners by the preparation of the self learning materials
22.	18BEDS12	Approaches, Methods and Techniques of Teaching English	1. To develop competence in teaching skills and techniques. 2. Practice skills in planning their lesson with reference to contents. 3. Analyse various techniques of teaching English. 4. Prepare daily lessons for teaching English. 5. Develop skill in preparing Individualised-instruction for teaching English.
23.	18BDSE21	School Subject II: Pedagogy of Teaching English	1. Understand the difference between ESL and EFL 2. Assess the characteristics of English language

			learners 3. Analyze the instructional strategies that suppo language development 4. Exercise the technologies related to English Language Learning 5. Acquaint with testing and evaluation in ESL 6. Practice andragogy in classroom teaching
24.	18BDSSV2	Specialization: Curriculum Designing, Adaptation and Evaluation for Children with Visual Impairment	1. Be aware of various types of curriculum and select the appropriate one for the needy 2. Be capable of providing functional academic skills training to the visually impaired children 3. Identify the lacunae and teach DLS for visually impaired children 4. Adapt the curriculum to suit the needs of visually impaired children and choose appropriate pedagogical strategies to teach visually impaired children 5. Train the visually impaired children on creative art activities and adapt physical education activities; Work in collaboration with the organisations promoting sports, culture and recreation activities for visually impaired children
25.	18BDSSH2	Specialization: Curriculum Designing, Adaptation and Evaluation for Children with Hearing Impairment	1. Explain the curricular needs of children with hearing impairment in scholastic and non-scholastic areas 2. Judge the reading skill of children with hearing impairment 3. Know the challenges in developing writing skills in children with hearing impairment 4. Use different approaches and strategies to develop reading and writing skills 5. Devise curricular adaptation to meet the needs of individuals with hearing impairment andutilize appropriate methods and tools for curricular evaluation
26.	18BDSC07	Teacher Behaviour (Self Study Course)	1. Observe, analyze and document student behavior to match an appropriate intervention strategy to change behavior in a desired direction. 2. Establish classroom procedures and expectation (rules) to promote a positive, effective and efficient learning environment 3. Construct the organization of a classroom schedule/time management plan that includes various content areas, instructional

			strategies, grouping strategies 4. Experiment with new and innovative approaches to planning and teaching. 5. Analyze a given classroom situation for legal, ethical and professional issues and concerns, by applying legal, ethical, and professional reactions to the situation and provide resolutions to align the classroom
27.	18BEDM13	Curriculum and Resources in Mathematics Education	1. Understand the principles in curriculum development 2. Choose suitable resources for enhancing learning 3. Organize co-curricular activities related to mathematics 4. Collect books for enriching a mathematics library 5. Construct tests to measure the achievement test in mathematics 6. Judge the quality of a test
28.	18BEDP13	Curriculum and Resources in Physical Science Education	1. Identify the components of different micro teaching skills 2. Operate the different educational technology gadgets 3. Design and arrange a science laboratory and prepare the registers required for a lab 4. Demonstrate the ways of administering first aid 5. Catalogue the periodicals and books in the library 6. Construct and validate diagnostic test and achievement test
29.	18BEDB13	Curriculum and Resources in Biological Science Education	1. Identify the components of different micro teaching skills 2. Operate the different educational technology gadgets 3. Design and arrange a science laboratory and prepare the registers required for a lab 4. Demonstrate the ways of administering first aid 5. Catalogue the periodicals and books in the library 6. Construct and validate diagnostic test and achievement test
30.	18BEDH13	Curriculum and Resources in Home Science Education	1. Describe the concept and principles of Curriculum construction 2. Develop teaching-learning material for teaching Home Science

			3. Familiarize with laboratory organization and administration 4. Identify different resources related to library 5. Prepare objective based test items to assess the achievement and progress of pupils
31.	18BEDI13	Curriculum and Resources in History Education	1. Analyse curriculum for different levels of education and emerge as expert curriculum designers 2. Suitable resources for enhancing teaching learning process in history 3. Collect various materials needed for establishing history room and arrange it in a proper manner 4. Promote the library reading among the future citizens to widen their knowledge in the area of history 5. Construct different test tools and judge the quality of a test with the help of the tool to measure the achievement test in economics
32.	18BEDS13	Curriculum and Resources in English Education	1. Acquire knowledge about the curriculum development in English. 2. Acquaint with the various teaching learning materials in ELT 3. Understand the role of Language lab and Library in the teaching of English. 4. Get thorough with the purpose of Evaluation and develop the skill of tool construction 5. Prepare and practice tools to evaluate the students
33.	18BDSSV3	Specialization: Educational Intervention and Teaching Strategies for Children with Visual Impairment	1. Apply intervention strategies to convert the visual concepts into accessible experiences to the visually impaired 2. Alleviate math phobias and develop mental math skills among the visually impaired children 3. Possess necessary competencies and skills to teach science to the visually impaired students 4. Prepare tlm in social science for the children with visual impairment and adapt strategies of evaluation 5. Increase the use of residual vision of the low vision students through visual efficiency trining

34.	18BDSSH3	Specialization: Educational Intervention and Teaching Strategies for Children with Hearing Impairment	1. Be aware of the early intervention programmes for the hearing impaired infants and children 2. Apply auditory listening and speech reading to facilitate language development among the children with hearing impairment 3. Facilitate speech through speech intervention with appropriate strategies among the hearing impaired children 4. Select and train on appropriate mode of communication for the children with hearing impairment 5. Know and shape up the outcomes of educational intervention
35.	18BDSEV2	Discipline Specific Elective(DSE) II: Orientation and Mobility	1. Orient the visually impaired on mobility 2. Be capable of training the visually impaired with sighted guide techniques 3. Facilitate the visually impaired to make use of mobility canes for smooth travel 4. Be familiar with the developments in the field of mobility techniques and gadgets for the visually impaired 5. Train the visually impaired on the independent living skills
36.	18BDSEH2	Discipline Specific Elective(DSE) II: Communication Options - Oralism	1. Have a clear idea of the hearing loss in real life context 2. Know the pros and cons of aural oral options in india 3. Conduct training sessions on literacy development for the hearing impaired 4. Motivate the hearing impaired for self learning 5. Foster supportive skills leading to linguistic adequacy and fluency while developing spoken language in children with hearing impairment
37.	18BDSPE1	Enhancement of Professional Capacities(EPC): Reading and Reflecting on Text	1. Facilitate the students to reflect upon the current level of literacy skills 2. Promote interest among students to acquire skills required to be active readers 3. Help students acquire basic skills of independent writing 4. Facilitate good reading writing in students across the ages 5. Encourage students to find reading writing as recreational tools
38.	18BDSPE2	Enhancement of Professional	1. Possess basic understanding in art appreciation, art expression and art

		Capacities(EPC): Drama and Art in Education	education 2. Enhance learning through dance and music for children with and without special needs 3. Plan and implement activities to facilitate interest in drama among the children with and without special needs 4. Adapt the strategies of art expression for the children with special needs 5. Be familiar in applying media and electronic art forms to enhance learning among children
39.	18BDSC08	Early Childhood Care and Education	1. Know the fundamentals of early childhood education 2. Work in interdisciplinary teams asa resourceful special educator 3. Practice the early education pedagogy in inclusive set ups 4. Study the children scientifically 5. Develop network for care and education of the children
40.	18BDSC09	Inclusive Education	1. Value and appreciate diversity in inclusive education 2. Be familiar with the key international & national policies and frameworks facilitating inclusive education 3. Adapt instructional strategies for teaching in inclusive classrooms 4. Work collaboratively and support stakeholders in implementing inclusive education 5. Accommodate the needs of the children with sensory, locomotor and neuro developmental disabilities in an inclusive set up
41.	18BDSC10	Gender and Disability	1. Be familiar with gender concepts and soc construction of gender 2. Practice gender sensitive approaches education 3. Know the impact of gender on disability 4. Promote gender justice 5. Handle the issues related to disabled wom and girl children
42.	18BDSM14	Professionalising Mathematics Education	1. Describe the steps in content analysis 2. Critically analyse the quality of mathematics textbook 3. Develop e-content lesson for any topic 4. Explain the types of research

			5. Develop research attitude among students 6. Organize co-curricular activities in mathematics
43.	18BDSP14	Professionalising Physical Science Education	1. Analyse the content and pedagogy of text books 2. Analyse and evaluate text books 3. Design and develop e - content material 4. Conduct an action research 5. Organise science exhibitions and science fairs
44.	18BDSB14	Professionalising Biological Science Education	1. Describe the importance of pedagogical content analysis 2. Compare and interpret the content of different boards of education 3. Analyse and evaluate text books 4. Design and develop e - content material 5. Conduct an action research 6. Organise science exhibitions and science fairs
45.	18BDSH14	Professionalising Home Science Education	1. Analyse the school curriculum of Home Science 2. Prepare anyone e-lessons of Home Science from school Text book 3. Develop e-content on any one school topic of home science 4. Experiment small projects in school 5. Develop few co-curricular activities in Home Science
46.	18BDSI14	Professionalising History Education	1. Attempt the pedagogical analysis and suggest improvement in it 2. Critically analyse the quality of history textbooks at all levels of education 3. Develop e-content lesson for any topic either at school level or higher education level 4. Develop research attitude among the future citizens of the country 5. Undertake any type of research and recommend the findings for the policy making 6. Stimulate the interest among the future citizens to involve themselves in the co-curricular activities
47.	18BDSS14	Professionalising English Education	1. Analyze the content of the text book critically

			2. Acquire with pedagogical analysis 3. Familiarize with e-content development and module preparation 4. Develop fluency in english through co-curricular activities 5. Gain the knowledge to do action research and interpret it
48.	18BDSSV4	Specialization: Technology and Education of Children with Visual Impairment	1. Relate ICT to the education of children with visual impairment 2. Adapt technology for the visually impaired 3. Be familiar with prinit access technologies for the visually impaired 4. Apply appropriate technologies for teaching various school subjects to the low vision children 5. Apply computer aided teaching learning for the children with visual impairment
49.	18BDSSH4	Specialization: Technology and Education of Children with Hearing Impairment	1. Be familiar with the listening devices and classroom acoustics for effective teaching and learning 2. Apply technology for speech management of the hearing impaired 3. Facilitate language and communication among the hearing impaired with the help of appropriate technology 4. Know the trends in the field of teaching learning and evaluation of the hearing impaired through technology 5. Be a resource mobilize for technology for the hearing impaired
50.	18BDSSV5	Psycho Social and Family Issues of Individuals with Visual Impairment	1. Counsel the parents and the members to foster the education of visually impaired\ 2. Tap support from family of the visually impaired in early stimulation, concept development and early intervention 3. Involve parents in individualized education plan(iep) and individualized family support plan(ifsp) 4. Be familiarize with the legal provisions and concessions pertaining to visual impairment 5. Enhance prosocial behaviour among children with visual impairment
51.	18BDSSH5	Specialization: Psycho Social and Family Issues of Individuals with Hearing	1. Be familiar with the psychological aspects and disability 2. Support family and community in fostering psychosocial development of children with hearing impairment

		Impairment	3. Foster family's acceptance of child's impairment 4. Involve family in fostering and developing play, recreation and values in education of the hearing impaired 5. Guide and counsel persons with hearing impairment and their family
52.	18BDSPE3	Enhancement of Professional Capacities(EPC): Basic Research and Statistics	1. Know the role of research in education and special education 2. Possess competencies for conduct of research 3. Communicate the results of the research with due specifications 4. Possess scientific attitude in interpreting the results of a research 5. Adapt the results of a research to the local specific needs
53.	18BDSPE4	Enhancement of Professional Capacities(EPC) - Application of ICT in Classroom	1. Apply ICT in special education 2. Use the media effectively in the field of special education 3. Be familiar with different modes of computer based learning 4. Visualize technology supported learning situations 5. Identify software for managing disability specific problems

M. Ed			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MDSC01	Developments in Education and Special Education	1. Understand and trace the development of educational system in India and specific to Special Education 2. Seek solutions for the issues and challenges of present day education system 3. Transfer the knowledge on the Policies and Legislations related to Special Education to the School Authorities and other Stake holders 4. Familiarize in quality teaching - learning strategies, classroom environment, and student assessment 5. Critically analyse the current trends in educating the younger generation for national development
2.	20MDSC02	Psychology of Development and Learning	1. Use appropriate psychological methods to assess persons with disabilities 2. Survey to analyse the status of persons with

			disabilities 3. Analyse the cognitive development of an individual 4. Critically analyse the principles and their implication for growth and development guide children with disabilities in their educational pursuits
3.	20MDSCV1	Identification, Assessment and Needs of Children with Visual Impairment	1. Identify various types of disorders in persons with visual impairment 2. Use appropriate methods and tools for assessment of children with blindness 3. Prepare and administer a teacher made tool for functional assessment of children with visual impairment and multiple disabilities 4. Critically examine the needs arising at different stages of persons with visual impairment 5. Acquire skills to plan and implement vision efficiency training for children with low vision
4.	20MDSCH1	Identification, Assessment and Needs of Children with Hearing Impairment	1. Interpret audiograms and assess the educational needs of children with different types and degrees of hearing loss 2. Evaluate the speech of children with hearing impairment 3. Use appropriate strategies, material, and equipment for teaching speech 4. Utilize appropriate methods, techniques & tools for educational assessment of children with hearing impairment 5. Promote team approach in assessment and identification of needs of children with hearing impairment
5.	20MDSCV2	Curriculum and Teaching Strategies for Children with Visual Impairment	1. Acquire knowledge on various curricular domains 2. Adapt curriculum to meet the needs of children with visual impairment 3. Design a need based curriculum for children with visual impairment 4. Apply appropriate teaching strategy in teaching reading, writing, and math 5. Critically examine approaches to curriculum development for vi&md
6.	20MDSCH2	Curriculum and Teaching Strategies for Children with Hearing Impairment	1. Devise curricular adaptation to meet the needs of individuals with hearing impairment 2. Utilize meta cognitive strategies and instructional practices to develop literacy among children with hearing impairment 3. Explain the processes and theories of

			literacy development 4. Application of differentiated instructional strategy in classroom situation 5. Critically examine the gaps in literacy research.
7.	20MDSPV1	Specialization Practical I -Visual Impairment	1. Prepare lesson plans for vision stimulation training for children aged 2 to 12 years 2. Screen children with vision loss using the checklist 3. Train children with vision loss to use assistive devices 4. Carryout and interpret the results of the psychological tests to the visually impaired 5. Make use of the softwares, apps in the education and rehabilitation of the children with visual impairment
8.	20MDSPH1	Specialization Practical I -Hearing Impairment	1. Recommend the mode of training and educational placement using aided audiogram and Speech audiometry 2. Prepare lesson plans for listening training for CWHI aged 2-5 years 3. Critically analyse the phonation and articulation in hearing children and CWHI 4. Counsel and guide the family regarding home training activities to improve listening skills, articulation and language 5. Carryout and interpret the results of the psychological tests to the hearing impaired
9.	20MDXAE1	Adult Education	1. Understand the role of various agencies to eradicate illiteracy in India 2. Apply various motivational techniques for Adult Education 3. Plan and organize Adult Education Program in local community 4. Identify problems in Adult Education and conduct Action Research 5. Follow-up action related to problems and issues encountered.
10.		Internship in Clinics/Institutes	1. Screen children with vision loss/hearing loss 2. Examine the process of optometry/audiometry 3. Acquire knowledge on observation 4. Critically examine the case report 5. Apply appropriate devices on basis of severity
11.	20MDSC03	Research Methodology and Statistics	1. Understand the types, methods and process of research 2. Identify research problems in the field of

			special education 3. Acquaint knowledge on writing research proposals 4. Analyse and interpret data and submit a report 5. Compute data using application
12.	20MDSC04	Curriculum Design and Development	1. Define and identify different components of curriculum 2. Design curriculum using different approaches and types to meet the needs of children with disabilities 3. Construct universal design of learning 4. Adapt curriculum for children with disabilities 5. Critically analyse the issues in curriculum
13.	20MDSC05	Therapeutics and Assistive Devices	1. Critically analyse and take decisions for Therapeutic Interventions 2. Select appropriate assistive devices for occupational therapy 3. Set goals for Speech and Language therapy based on the evaluation of assessment of needs 4. Familiarize ICT and apps for individuals with learning disabilities acquaint knowledge in Counseling Therapies
14.	20MDSCV3	Application of Advanced Technology and Persons with Visual Impairment	1. Identify the assistive technology available for visually impaired 2. Illustrate various devices to facilitate the education of persons with visual impairment 3. Facilitate persons with visual impairment for independent living using technology 4. Provide suggestions to make workplace disabled friendly using technology 5. Acquire knowledge on recent technology available for persons with visual impairment
15.	20MDSCH3	Assistive Devices and Services for Individuals with Hearing Impairment	1. Guide the hearing impaired to avail aids and appliances through various schemes 2. Suggest listening and assistive devices in audiological management at schools/institutions 3. Analyse the challenges in communication options and facilitate the use of technology to overcome 4. Facilitate articulation in children with hearing impaired 5. Familiarize with the role of technology in the education of children with hearing impaired
16.	20MDSPV2	Specialization Practical II - Visual	1. Utilize tools available for functional vision evaluation and educational evaluation

		Impairment	2. Develop activities for functional assessment of children with visual impairment 3. Critically analyse needs, trends and issues with respect to children with visually impaired 4. Familiarize in developing teaching learning material for children visually impaired 5. Administer psychological tests to assess personality, occupational interest and aptitude of individuals with visual impairment
17.	20MDSPH2	Specialization Practical II -Hearing Impairment	1. Select and administer the tools available for educational evaluation of CWHI at different levels 2. Develop materials for pre reading and pre writing skills for CWHI 3. Understand administration of language tests for the hearing impaired and interpret the results for education and rehabilitation. 4. Familiarize in developing teaching learning material for children with hearing impaired 5. Administer psychological tests to assess personality, occupational interest and aptitude of individuals with hearing impairment
18.	20MEDI01	Environmental Education (IDC)	1. Identify the associated problems in natural resources on over exploration 2. Acquaint knowledge on the functions of ecosystem 3. Develop strategies and implement pollution-free environment 4. Create awareness related to environmental legislations among public 5. Understand the social issues and acts applicable for preventing and control of pollution
19.		Internship at Special/Inclusive Schools	1. Familiarize on screening of visual defects of CWVI 2. Acquire knowledge on articulation defects of CWHI 3. Apply the techniques for developing reading skills of non disabled and CWVI 4. Develop speech intelligibility of non disabled and CWHI 5. Create appropriate situations for developing speech and language for CWHI
20.	20MDSC07	Perspectives in Teacher Education - In-Service and Pre-	1. Reflect on issues and problems related with teacher preparation for education of children with disabilities 2. Critically analyse the changes in school

		Service	education for children with disabilities 3. Evaluate the various components of pre-service teacher education 4. Be aware of the in-service teacher education programme and suggest improvement in the quality of training 5. Appraise the existing teacher education curriculum and its relevance, issues and challenges
21.	20MDSC08	Educational Evaluation	1. Critically analyse the evaluation practices in various types of schools 2. Understand the scope of evaluation in education 3. Apply the tools for evaluation of teaching-learning 4. Develop format for self evaluation for institutions/schools/programmes/teachers/etc. 5. Familiarize in the use of evaluation as an effective tool in teaching-learning process
22.	20MDSC09	Guidance and Counselling (Self study course)	1. Visit different Guidance Centres and write a report 2. Review a film for counselling 3. List the resources required and their optimum use in managing a school guidance a. Programme 4. Develop a career choice assessment tool in view of personal characteristics of any 5. Child with disabilities and available opportunities 6. Prepare a brochure on career opportunities for children with different disabilities
23.	20MDSC10	Educational Planning and Policy Making	6. Describe the purpose of Educational planning in terms of national and Community needs 7. Use a variety of administrative strategies in Educational Institutions 8. Analyse educational policy , planning and finance 9. Describe the contribution of five year plans in India and their implications in the field of education 10. Describe the role of World Bank in Educational Policy and Financing in India
24.	20MDSCV4	Adulthood and Family Issues Related to Individuals with Visual Impairment	1. Analyse the role of family as a support system from birth to adulthood 2. Develop individualized transition plan (itp) for individuals with visual impairment 3. Provide guidance to marriage and home skill management for individuals with visual

			impairment 4. Prepare individualized family service plan(ifs for visually impaired 5. Develop a critical understanding of schemes for equal opportunities
25.	20MDSCH4	Adulthood and Family Issues Related to Individuals with Hearing Impairment	1. Provide awareness regarding family, peers, community, agencies and environmental support during transition from adolescence to adulthood of individuals with hearing impairment 2. Support individuals with hearing impairment on independent living 3. Guide the individuals with hearing impairment for higher education and career choices 4. Facilitate societal inclusion of individual wi hearing impairment 5. Familiarize advocacy at family and individu levels
26.	20MDSPV3/ 20MDSPH3	Internship at Special/Inclusive Schools	1. Suggest modifications for classroom seating arrangements for visually impaired 2. Acquire knowledge in acoustics for children with hearing impairment 3. Provide o&m training to visually impaired 4. Administer a checklist to screen hearing loss among primary school children select appropriate devices for screening vision/hearing loss
27.		FIELD ENGAGEMENT	1. Plan the calendar of activities and schedule of a special/inclusive school 2. Prepare teaching learning material for the education of children with special needs 3. Facilitate online and offline resources for students in the teaching-learning process 4. Create awareness about inclusive education of children with disabilities among school authorities acquire knowledge on planning the programmes for special / inclusive school
28.		Internship in Clinics/Institutes	1. Identify children with visual impairment 2. Identify children with hearing impairment 3. Teach ict to visually impaired 4. Train speech reading to hearing impaired children 5. Recommend mode of training and educational placement
29.	20MDSC11	Inclusive Education	1. Analyse the rresearch evidences on efficacy and best practices associated with inclusive education

			2. Acquire knowledge on the covenants and ppolicies ppromoting inclusive education 3. Promote inclusive learning environment 4. Suggest adaptations and accommodations for children with disabilities understand universal design of learning
30.	20MDSE1A	Educational Technology	1. Understand the roles of Educational Technologists in various contexts 2. Plan and develop Instructional design for children with disabilities 3. Develop interactive learning material for children with disabilities 4. Use ICT in curriculum transaction effectively and efficiently 5. Suggest suitable modality of instruction (Online, Blended, etc.)
31.	20MDSE1B	Educational Management	1. Critically analyse different approaches to management in special education 2. Take active part in implementing total quality management in education 3. Plan and organize training programme for capacity building 4. Acquaint skills required for enhancing institutional quality for sustained development prepare cost effective budgets, proposals and describe ways of managing financial resources
32.	20MDSPV4 / 20MDSPH4	Field Engagement - Internship as a Teacher	1. Plan calendar of activities & other schedule 2. Plan and conduct practical based activities for children with special needs 3. Coach weak performers for achieving the content mastery 4. Identify offline and online resources for teaching learning process 5. Evaluate the outcomes of the pre service trainees
33.	20MDSPV5 / 20MDSPH5	Internship in Clinics/Institutes	1. Promote rights of persons with disability 2. Plan and organize camps to create awareness on prevention and treatment 3. Encourage community participation to support adult disabled 4. Familiarize in needs, trends and issues with respect to disabilities gain knowledge on community resources

Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPSE01 / 19PHSE01	Advanced Paper in Research Methodology	1. State the meaning of research, significance of research and types of research 2. Explain types of variables, types of measurement scale 3. Describe the non- experimental and experimental methods 4. Apply parametric tests using statistical software
2.	19MPSE02 / 19PHSE02	Advanced Paper in Special Education	1. Have an overview on the concept of Special Education 2. Define different categories of disabilities 3. Be aware of National Policies and Acts for PWD'S 4. Focus on the present trends and future perspectives in Special Education.

Physical Education

B. Sc			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BPEC01	History and Foundation of Physical Education	1. Summarize the foundations of PE including the Historical and Philosophical aspects of the profession. 2. Describe perspectives of physical education issues and legislation in the society. 3. Resourceful person in various sports activities and Explore various carrier possibilities in the profession 4. Develop an inquiring mind which tries to see the environment, examine the own ability and stimulate curiosity. 5. Create Psychological and Sociological aspects of the profession
2.	18BPEC02	Theory of Games and Sports – I (Kho-Kho, Throwball and Gymnastics)	1. Understanding the basic knowledge about different games 2. Ability to Compete in Competitions 3. Expertise Technically and ability in officiating 4. Applying the knowledge of Skills and technique. 5. Analyzing the advance skills in various games
3.	18BPEC03	Practical – I Games and Sports – I (Kho-Kho, Throwball and Gymnastics)	1. Knowledge and understanding of a range of court and striking sports (including the rules and tactics used in each sport) 2. Demonstrate a range of movement skills relating to court and striking sports 3. Demonstrate the ability to analyse and apply theoretically based coaching and teaching practices and strategies 4. Make effective links between learning court and striking sports and the PDHPE syllabus 5. Develop basic skills and techniques to improve the Throwing Techniques.
4.	18BPEI01	DSE I - Fitness and Wellness	1. Develop an appreciation and positive attitude for a healthy lifestyle and the effects of global trends on physical activity. 2. Describe the components of physical fitness impact health and wellness. 3. Analyze the relationship between physical

			activity, inactivity, and nutrition on weight and body composition 4. Prepare and implement the techniques of stress management. 5. Recognize safety guidelines and proper evaluating techniques of Fitness
5.	18BPEC04	Anatomy and Physiology	1. Define a anatomic terms refer to the human body in terms of axis and planes. 2. Identify and locate the anatomical structures and functions of the human body. 3. Categorize the major organs and its functions of the body. 4. Describe the interdependency and interactions of t he systems. 5. Develop the practical knowledge in modern technology and tools to basic scientific facts.
6.	18BPEC05	Theory of Games and Sports - II (Kabaddi, Ball Badminton and Handball)	1. Teaching knowledge and understanding of a range of court and striking sports (including the rules and tactics used in each sport) Teaching knowledge and 2. .Understanding of a range of court and striking sports (including the rules and tactics used in each sport) 3. The ability to analyse and apply Practical based coaching and teaching practices and strategies 4. Teaching facility with current technologies to enhance learning. 5. The ability to demonstrate effective teaching strategies
7.	18BPEC06	Practical -II Games and Sports – II (Kabaddi, Ball Badminton and Handball)	1. Demonstrate knowledge and understanding of a range of court and striking sports (including the rules and tactics used in each sport) 2. Demonstrate a range of movement skills relating to court and striking sports 3. Demonstrate the ability to analyse and apply theoretically based coaching and teaching practices and strategies 4. Make effective links between learning court and striking sports and the PDHPE syllabus 5. Demonstrate understanding of effective assessment techniques used to evaluate performance in court and striking sports.
8.	18BPEI02	DSE II - Sports Nutrition	1. Demonstrate knowledge of a healthy diet for physical performance and demonstrate an

			ability to utilize this knowledge to complete a self-diet critique 2. Learn to judge nutritional requirements based on a food item: calories, quantity of protein, fat, carbohydrates, vitamins, minerals, antioxidants and more 3. Know the health benefits of combining healthy nutrition with Fitness and physical activity 4. understanding of numerous ergogenic aids and distinguish those that have been scientifically proven to enhance performance 5. Relate roles of nutrition in physical performance, recovery and adaptations to exercise. 6. Undertake a basic dietary assessment, and relate to the needs of the individual
9.	18BPEC07	Methods of Physical Education	1. Recall the meaning, method principles and factors of methods in physical education. 2. Summarize the physical activities for demonstration. 3. Apply the methods of teaching learning in classroom situation. 3. Preparing the students for Intramural and extramural competition 4. Organize the various level of competition
10.	18BPEC08	Sports Psychology and Sociology	1. Analyse a range of factors within and outside individuals which influence mind and behaviour 2. Effectively develop and apply health, physical activity, and psychological principles as they relate to human performance 3. Design, conduct, and evaluate research that address psychological questions 4. Demonstrate effective written and oral skills in various formats and for various purposes 5. 5. Explain the major perspectives of psychology (e.g. biological, cognitive, behavioral, sociocultural, etc.)
11.	18BPEC09	Theory of Games and Sports-III (Track & Field and Football)	1. Teaching knowledge and understanding of a range of court and striking sports (including the rules and tactics used in each sport) 2. Describe the recent skills that have extended Sports participation 3. The ability to analyse and apply Practical based coaching and teaching practices and strategies 4. Teaching facility with current technologies

			to enhance learning. 5. The ability to demonstrate effective teaching strategies
12.	18BPEC10	Practical – III Games and Sports – III (Track & Field and Football) Semester III	1. Demonstrate the ability to analyse and apply theoretically based coaching and teaching practices and strategies 2. Make effective links between learning court and striking sports 3. Develop basic skills and techniques to improve the Running skills 4. Demonstrate a range of movement skills relating to court and striking sports 5. Demonstrate knowledge and understanding of a range of court and striking sports (including the rules and tactics used in each sport)
13.	18BPEC11	Practical – IV Physical Activities (Marching, Calisthenics, Light Apparatus, Lezium, Folk Dance, Aerobics and Minor Games)	1. Describe the benefits of Physical activities can have on flexibility, muscle strength, muscle endurance and muscle power. 2. Develop an understanding and be able to create the drill in the primary styles. 3. Apply the appropriate technology and skills related to dance and rhythm 4. Analyze knowledge of games for participation in physical education as relevant to contemporary settings 5. Design experiences to apply movement skills, concepts and strategies in physical activities with responsibility and accountability
14.	18BPEI03	DSE III - Computer Applications in Physical Education	1. Perform and report on the exploratory analysis of data collected using sports technology 2. Analyse sporting data of various types via astute use of statistical packages. 3. Practice mathematics, statistics, information technology in sport technology related problems. 4. Support a conclusion based upon quantitative prediction, performance and analysis of 5. a sporting team, code, or gaming environment. Offer Hands on Knowledge in sports Technology
15.	18BPEC12	Physiology of Exercise	1. Define the human anatomy and physiology. 2. Describe the kinesthetic movement and the physiological effects of exercise in human body, 3. Apply the major concepts, theories, and empirical findings in health science.

			4. Compare the responses of individuals of differing levels of fitness to a variety of relative and absolute exercise intensities 5. Formulate the physiological bases for differences in exercise responses and Performance
16.	18BPEC13	Movement Education and Primary Physical Education	1. Apply basic anatomical relationships to the felt sense of the body, including the expressiveness inherent in movement. 2. Develop skills in presenting, both in writing and in speaking, topics from the discipline of Movement Studies. 3. Gain proficiency in skills specific to the efficient movement. 4. demonstrate understanding that physical activity can affect body composition and help maintain a healthy body 5. Provides children with opportunities to improve fitness and be active for societal trends
17.	18BPEC14	Science of Yoga	1. Know the classical and theoretical foundations in the field of Yoga. 2. Apply Knowledge of biomedical systems from an integrative and holistic perspective, as needed for the practice of Yoga 3. Describe human anatomy, physiology and biomechanics, and the interrelationships between systems of the body 4. Analyze the ethical principles of health care and yoga codes of conduct; in depth knowledge of legal and regulatory issues 5. Develop the effective teaching methods by adapting to unique styles of teaching
18.	18BPEC15	Theory of Games and Sports-IV (Track& Field, Badminton and Table Tennis)	1. Equip the students with the fundamental skills and knowledge to design his/her own training program. 2. Aims to provide students with the basic sports science knowledge and skills of running, jumping and throwing 3. Appreciate track and field events by applying sports science knowledge to explain the execution of the events. 4. Obtaining knowledge of the basic techniques, rules and regulations of the various events. 5. Verbalise the rules and regulations of each event.
19.	18BPEC16	Practical –V Games and Sports-IV	1. Demonstrate the concepts to throw further, run faster, and jump higher and longer.

		(Track & Field, Badminton and Table Tennis)	2. Co-operate in the set up and take down of equipment in a positive manner. 3. Demonstrate proper form and technique while performing each event. 4. Analysis of a partners technique and give positive corrective feedback to improve their ability in each event. 5. Co-operate in the set up and take down of equipment in a positive manner.
20.	18BPEC17	Practical-VI Science of Yoga	1. Know the yogic perspectives on the structure, states, functions, and conditions of the body and the mind. 2. Apply skilled yoga techniques to provide healthcare solutions for the benefit of the society at every stage of life. 3. Analyze the intellectual skills to analyze and solve healthcare disorders through designing specific yoga. 4. Develop the modern tools and techniques in developing yoga 5. Design advanced yoga based therapies to meet identified needs within economic, environmental and social constraints
21.	18BPEI04	DSE IV - Educational Technology	1. Perform and report on the exploratory analysis of data collected using sports technology 2. Analyse sporting data of various types via astute use of statistical packages. 3. Practice information technology in Physical Education activities 4. Provision of conclusion based upon quantitative prediction, performance and analysis in Physical Education teaching 5. Offer Hands on Knowledge in Education Technology
22.	18BPEC18	Sports Training	1. Identify different methods of coaching. 2. Design and implement a team sport practice session for healthy populations. 3. Observe and evaluate coaching styles, including coaching objectives and philosophy. 4. Apply current research and industry standards to programs that develop skill-related health and fitness in athletes. 5. Utilize and enhance team sports programming and teaching strategies learned
23.	18BPEC19	Adapted Physical Education	1. Relate a variety of factors to growth and motor development of individuals. 2. Demonstrate motor patterns, fundamental

			motor skills, sport specific skills and physical activity patterns of children and adolescents with special needs. 3. Recognize the perceptual-motor behavior and developmental levels of the individual 4. Obtain knowledge about ability levels of persons with disabilities and gifted and talented individuals. 5. Providing appropriate curricula/programming for participants in adapted physical education settings
24.	18BPEC20	Theory of Games and Sports-V (Basketball and Hockey)	1. Outline the Basketball Long-Term Player Development Model, specifically how it relates to young players 2. Identify the fundamental movement and basic technical skills of basketball and hockey to include multi- directional movement and footwork, perceptual abilities, passing, dribbling, shooting, rebounding, offensive and defensive stance. 3. Explain basic tactical elements of basketball and hockey to include movement without ball, spacing and principles of the game 4. Apply the lifestyle, health related and fitness components that are involved the game of basketball and hockey 5. Display a working knowledge, roles and basic responsibilities of the coach in Practice.
25.	18BPEC21	Practical – VII Games and Sports – V (Basketball and Hockey)	1. Outline the Basketball Long-Term Player Development Model, specifically how it relates to young players 2. Identify the fundamental movement and basic technical skills of basketball and hockey to include multi- directional movement and footwork, perceptual abilities, passing, dribbling, shooting, rebounding, offensive and defensive stance. 3. Explain basic tactical elements of basketball and hockey to include movement without ball, spacing and principles of the game 4. Apply the lifestyle, health related and fitness components that are involved the game of basketball and hockey 5. Display a working knowledge, roles and basic responsibilities of the coach in Practice.
26.	18BPEC22	Practical - VIII Industrial Orientation of Sports	1. Demonstrate knowledge of the various skills, roles and functions of sport managers. 2. Obtain Knowledge of legal concepts, basic

			risk management issues and governing bodies as they relate to the sport workplace. 3. Maintaining the concepts of morality and theories of ethics as they apply to sport. 4. Apply and evaluate principles of interpersonal communication, mass communications and public relations as they are related to sport organizations 5. Apply fundamental marketing concepts to the sport industry, and the unique aspects of sport, consumer and sport product markets.
27.	18BPEC23	Health Education, Safety Education and First Aid (Self Study)	1. Identify and classify the various aspects of health. 2. Classify the diseases and Health issues 3. Identify the health problems of youth and the harmful effects of using drugs etc. 4. Apply the various safety measures to be taken in schools and playfields and at home. 5. Know basics of first aid, and apply same in the play fields during injury and accident.
28.	18BPEC24	Physical Education (Computer Based Test)	1. Know the basic computer knowledge. 2. Apply Computer Applications through innovative teaching and learning processes 3. Recognize professionally competent and face the challenges in the industry. 4. Implement the operating systems and networks in the field of Physical Education 5. Evaluate the attributes requires both appropriate learning activities and 'fit- for-purpose' assessment.
29.	18BPEC25	Internship- Teaching Practice (General and Particular)	1. Describe the measurable skills, abilities, knowledge or values of teaching methods. 2. Apply the constructive alignment that underlies the outcomes model of learning. 3. Develop the effective General and Particular lesson plans. 4. Design suitable assessment strategies and determine acceptable evidence of student learning, 5. Analyze the different teaching approaches from teaching students to memorize.
30.	18BPEC26	Kinesiology and Biomechanics	1. Identify biomechanical, health, physiological, and psychological limitations to and interventions for improving physical performance. 2. Analyse and explain the mechanisms underlying biomechanical, physiological, and psychological changes that occur during after acute and chronic exercise. 3. Develop physical conditioning programs

			based on scientific principles designed to develop physical fitness and improve athletic performance. 4. Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury 5. Know effectiveness of human movement using mechanical principles.
31.	18BPEC27	Sports Injuries and Physiotherapy	1. Understand the primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes. 2. Demonstrate the basics of sport first aid during and after game situation. 3. Recognise and appropriately treat common sports injuries and conditions from onset through rehabilitation. 4. Identify and apply knowledge of anatomy to the design and execution of research studies. 5. Able to collect and analyse data in a motor learning, exercise physiology, or other sports medicine lab settings.
32.	18BPEC28	Gym Management	1. Promoting professionals with competency and commitment 2. Expertise in principles of fitness training 3. Obtain Knowledge for profitability with the right mind of products and services 4. Implement systems to ensure the upkeep and safety of the facility and the equipment 5. Developing different vigorous physical activity for health and fitness
33.	18BPEC29	Traditional Games of India	1. Appreciate the Influence of Traditional Games in the Indian Culture 2. To give students an opportunity to explore and play Indian Traditional Games 3. To be able to work as a team and engage in fair play 4. Improves precision ability, and hence enhances concentration. 5. Improves aim and focus.
34.	18BPEC30	Theory of Games and Sports-VI (Volleyball and Softball)	1. Students are able to apply personal skills (including serving, overhand passing, underhand passing, spiking and blocking) in modified games. 2. Provide opportunities for students to make self and peer assessment to enhance collaborative learning. 3. Understanding of the teaching/coaching

			techniques 4. Expertise in teaching basic skill and advance skill in softball 5. Creates Opportunity to officiate in different tournaments .
35.	18BPEC31	Practical – IX Games and Sports – VI (Volleyball and Softball)	1. Demonstrate a range of movement skills relating to court and striking sports 2. Develop basic skills and techniques to improve the techniques 3. Understand basic Softball rules, terminology, and scoring procedures. 4. Demonstrate basic skills associated with volleyball, including passing, setting, serving, attacking (spiking), and blocking. 5. Students are able to apply personal skills (including serving, overhand passing, underhand passing, spiking and blocking) in modified games.
36.	18BPEV01	Value Added course Youth Fitness	1. Obtaining Knowledge about fitness and Wellness 2. Analyze their own ability and Performance 3. Experience the illness free life 4. Understanding the value of life 5. Opportunity to serve to society
37.	18BPEV02	Value Added course Indoor Games (Badminton, Table Tennis and Board games)	1. Understand the basic rules in Indoor games. 2. Apply the knowledge for the fitness. 3. Experience the relaxed and healthy life style and daily routine. 4. Realize the healthy benefits through physical activities. 5. Develop the Group Cohesion.

B.P. Ed			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BPDC01	History, Principles and Foundation of Physical Education	1. Know the origin and development of Physical Education 2. Apply the knowledge of Olympism in organizing various sport activities. 3. Distinguish the functional operations on National and International Olympic Federations. 4. Analyze the concepts and issues pertaining to Physical Education. 5. Formulate the principles, philosophy and concepts about Physical Education
2.	18BPDC02	Anatomy and	1. Understand the basic principles of anatomy

		Physiology and Exercise Physiology	physiology and Exercise Physiology 2. Apply the knowledge in the field of physical education and movement activity. 3. Analyse the practical knowledge during the practical situation. 4. Remember and recall the definition of anatomy and physiology and co-relate the principles of physiology. 5. Appraise the effects during the training and practical sessions
3.	18BPDC03	Educational Technology and Methods of Teaching in Physical Education	1. Plan, develop, communicate, implement, and evaluate technology-infused strategic plans. 2. Maintain and manage a variety of digital tools and resources for use in technology rich learning environment 3. Design, develop, and implement technology-rich learning program that model principles of learning and promote digital age best practices in teaching, learning and assessment. 4. Find out how successful were the teachers' efforts in contributing to the realization of the fundamental objectives of education. 5. Assessments which learning experiences were effective in promoting and enhancing learning, which teaching methods and techniques are effective in the realization of the educational objectives.
4.	18BPDE1A	DSE I - Olympic Movement	1. Know historical background of their adopted country's sports and cultural practices and find out how these have developed over time 2. Demonstrate understanding and affirmation of Olympics Ideals and logos 3. Know the different working organisations and federations of the various sports and games and gain knowledge about special Olympics 4. Explore the attitudes and values of the curriculum which correspond to the universal ethics of Olympism and critically analyse these attitudes and values. 5. Appraise, adapt, and use physical activities to ensure that specific social and cultural needs are met.
5.	18BPDE1B	DSE I – Health Education and Environmental Studies	1. Explain the history and philosophy of public health as well as its core values, concepts, and functions across the globe and in society.

			2. Identify the methods, and tools of public health data collection, use, and analysis 3. Relate the underlying science of human health and disease to opportunities for promoting 15 and protecting health across the life course. 4. Identify the socio-economic, behavioural, biological, environmental, and other factors that impact human health and contribute to health disparities. 5. Apply the principles of project implementation, including planning, assessment, and evaluation in organizational and community initiatives.
6.	18BPDC04	Track and Field (Running Events)	1. Develop basic skills and techniques to improve running techniques and styles 2. Display competencies in executing basic techniques and skills associated with hurdles. 3. Categorize techniques and skills associated with relay runners, exchanges and zones 4. Appreciate track events by applying sports science rules and knowledge in execution and conduct of events. 5. Plan to organize and construct competition and competitions arena.
7.	18BPDC05	Project Meet, Intramurals and Field Work	1. Know the different types of sports events and their purpose. 2. Identify the roles and responsibilities involved in the planning of sports events. 3. Design the plan and promote a sports event 4. Demonstration of participation in the delivery of a sports event 5. Review the planning and delivery of a sports event
8.	18BPDC06	Indigenous Games (Kho-Kho, Kabaddi and Throwball)	1. Establish effective arrangements for the participation of indigenousgames among students and decisions regarding the planning, delivery and evaluation of education services for society. 2. Creativity is usually at a high while engaged in imaginative play through Indigenous games, as it does not have boundaries. 3. Helping the students in developing professional and personal skills. 4. To understand the cultural heritage of our country 5. To enable students to Organize and develop new games.
9.	18BPDC07	Mass Demonstration	1. Introduce the Preparation and Concept of

		Activities (Malkhambh, Lezium, March Past, Dumbbells, Wands and Hoops)	mass Demonstration 2. Describe the Commands of Mass Demonstration and exercise of mass demonstration with and without apparatus 3. Provide the Knowledge of various Apparatus 4. Develop skilful, creative mastery of the body in a demonstration context. 5. Enhance knowledge and understanding of demonstrations an aesthetic experience
10.	18BPDC08	Yoga Education	1. Understand the basic Concepts of Yoga 2. Apply the principles of Yoga to live healthy and active life style. 3. Promote the awareness of health through yoga 4. Analyse the techniques and of body posture to bring out healthy change. 5. Develop the knowledge through practice, participate and organize.
11.	18BPDC09	Organization and Administration in Physical Education	1. Understand the principles and process of Administration and Management 2. Administer physical education and sports programs in schools. 3. Develop appropriate physical education curriculum, tools and budget to manage school programs 4. Appraise and manage physical education facilities and personnel in school 5. Design tournament fixtures and structures to organize competitions
12.	18BPDC10	Computer Applications in Physical Education	1. Perform and report on the exploratory analysis of data collected using sports technology 2. Analyse sporting data of various types via astute use of statistical packages. 3. Practice mathematics, statistics, information technology in sport technology related problems. 4. Support a conclusion based upon quantitative prediction, performance and analysis of a sporting team, code, or gaming environment. 5. Offer Hands on Knowledge in sports Technology
13.	18BPDE2A	DSE II - Contemporary Issues in Physical Education, Fitness and Wellness	1. Discuss research from a multidisciplinary perspective relative to current issues in physical activity and health. 2. Apply qualitative research methods to explore and critically examine a variety of curricular topics.

			3. Demonstrate application of relevant research and theory to a contemporary issue in physical activity and exercise science. 4. Explain the contemporary issues and topics pertaining to the physical activity and health field. 5. Evaluate promoting inclusive physical education that responds to the interests and needs of all students and athletes.
14.	18BPDE2B	DSE II - Sports Nutrition and Weight Management	1. Restate the role of nutrients and caloric requirements 2. Sketch the basic classification, functions and utilization of nutrients. 3. Point out diet for various competitions and nutrient supplements for performance. 4. Evaluate the factors affects weight management and solutions for obesity. 5. Design caloric requirements for various sports and age groups.
15.	18BPDC11	Track and Field (Jumping Events) and Project Meet	1. Know the basic techniques and skills associated Jumping events. 2. Develop basic skills and techniques to improve one's running posture and take-off position for different jumps. 3. Apply basic principles of training and five bio-motor abilities to design his/her training program. 4. Analyze sports science knowledge to explain the execution of the events 5. Design personal challenges and compare performance to previous personal attempts
16.	18BPDC12	Yoga, Aerobics ,Gymnastics and Field Work	1. Define and identify the various skills with proper body alignment, postures and movement. 2. Demonstrate the means and methods of appropriate activities to develop movement competence. 3. Explain the effective methods by applying the values benefits as an integrative health practice. 4. Evaluate the specific skills and scientific literacy to the global evolution. 5. Organize the competitions and increase professional relationship.
17.	18BPDC13	Racket Sports (Badminton, Ball Badminton, Table Tennis and Tennis) and Intramurals	1. Utilize and apply the knowledge of racquet sport rules, terminology, and scoring procedures. 2. Demonstrate proper court etiquette and good sportsmanship 3. Demonstrate an understanding of health-

			related fitness components: cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, body composition, and stress management. 4. Identify the major muscle groups and their application to racquet sports. 5. Improve personal fitness through participation in aerobic, muscular strength, muscular endurance, and flexibility activities
18.	18BPDC15	Sports Training	1. Understand training as performance based science 2. Explain different means and methods of various training 3. Prepare training schedule for various sports and games 4. Appraise types of periodization for performance development 5. Create various training facilities and plans for novice to advance performers
19.	18BPDC16	Measurement and Evaluation in Physical Education	1. Understand the basics of Test, Measurement and Evaluation in physical education, Health and Fitness. 2. Know about the different types of test for different sports and games. 3. Apply the tests in minor research areas. 4. Analyze the performance and movements in the field of sports. 5. Evaluate the battery test and others tests prescribed by the government efficiently.
20.	18BPDC17	Sports Psychology and Sociology	1. Explain group mechanisms and group psychology in a sports context 2. Reflect upon motivational psychology as applied to sports activities 3. Formulate relevant constructs of exercise psychology 4. Demonstrate the ability to discuss sociological theories, concepts, and ideas in large and small groups and to express empirically as well as theoretically-based opinions. 5. To apply core sociological theories to specific social problems in order to analyze social problems.
21.	18BPDC18	Sports Management (Self Study)	1. Know sports management and employ principles of strategic planning, and financial and human resource management. 2. Assess marketing needs and formulate short term and long term solutions. 3. Develop critical thinking in analysing sport

			management issues and in managerial planning and decision making. 4. Demonstrate information literacy and communication skills. 5. Conceive, plan, execute, and evaluate a sports event.
22.	18BPDC19	Physical Education(Computer Based Test)	1. Know the basic computer knowledge. 2. Apply Computer Applications through innovative teaching and learning processes. 3. Recognize professionally competent and face the challenges in the industry. 4. Implement the operating systems and networks in the field of Physical Education 5. Evaluate the attributes requires both appropriate learning activities and 'fit- for-purpose' assessment.
23.	18BPDE3A	DSE III - Sports Medicine, Physiotherapy and Rehabilitation	1. Understand the primary responsibilities the sports trainer has in preventing sports injuries and providing initial care for injured athletes. 2. Demonstrate the basics of sport first aid during and after game situation. 3. Recognise and appropriately treat common sports injuries and conditions from onset through rehabilitation 4. Identify and apply knowledge of anatomy to the design and execution of research studies. 5. Able to collect and analyse data in a motor learning, exercise physiology, or other sports medicine lab settings.
24.	18BPDE3B	DSE III - Curriculum Design	1. Introduce the teaching and curriculum objectives and course module design 2. Identify the most important learning requirements 3. Analyze the planning strategies, teaching, learning and assessment 4. Develop strategies to promote quality learning, practice marking and consider methods of course and self-evaluation 5. Evaluating learning intentions and the process that is guided through explicit and
25.	18BPDC20	Track and Field (Throwing Events)	1. Display competencies in executing basic techniques and skills associated with throwing events. 2. Develop basic skills and techniques to improve one are the throwing positions for different throws. 3. Appreciate throwing events by applying sports science knowledge to explain the execution of the events.

			4. Apply basic principles of training and five bio-motor abilities to design her training program. 5. Analysis of a partner's technique and give positive corrective feedback to improve their ability in each event.
26.	18BPDC21	Combative Sports (Martial Arts, Karate, Silambam, Fencing and Taekwondo)	1. Understand the basic techniques and have the ability teach the fundamentals 2. Implement the fighting and officiating techniques in Karate 3. Create Interest to deliver the basic stance in fencing. 4. Apply the fundamentals of taekwondo and silambam in practical situation and Practices. 5. Create interest to start the School of defensive arts / Martial arts
27.	18BPDC22	Team Games (Football, Netball, Handball, Baseball, and Cricket)	1. Understand the issues and processes that relate to team formation and development in a virtual context 2. Identify barriers to effective team work in a virtual environment and propose solutions 3. Review and comment on team activities in a virtual environment and develop insights to make informed judgements and recommendations for future good practice 4. Develop theory and practical experience to make recommendations for good practice in new team environments. 5. Assess each team game in terms of fitness value.
28.	18BPDC24	Sports Entrepreneur Skill Development	1. Define and analyze the entrepreneurial experience and the entrepreneurial mind 2. Identify legal issues for the sport entrepreneur and the different types of corporations. 3. Examine new online technological portals to access current issues in Sports Entrepreneurship 4. Demonstrate creativity and the business idea in sport entrepreneurs 5. Analyze the sport entrepreneurial strategy, analyze strategies for growth and managing the implications of growth, and examine the sources of a capital and venture capital.
29.	18BPDC25	Kinesiology and Biomechanics	1. Identify biomechanical, health, physiological, and psychological limitations to and interventions for improving physical performance. 2. Analyse and explain the mechanisms

			underlying biomechanical, physiological, and psychological changes that occur during after acute and chronic exercise. 3. Develop physical conditioning programs based on scientific principles designed to develop physical fitness and improve athletic performance. 4. Understand mechanical principles can be applied to the analysis of human movement to assess and improve performance and reduce risk of injury. 5. Know effectiveness of human movement using mechanical principles
30.	18BPDC26	Officiating and Coaching	1. Understand the concept and mechanism of officiating and coaching. 2. Describe the duties of coaches and officials. 3. Identify and implement risk management strategies for the well-being of athletes, spectators and officials. 4. Analyze training requirements for different sporting populations 5. Apply the concept of coaching and officiating
31.	18BPDC27	Theory of Sports and Games	1. Know the fundamental of all the games and sports 2. Understand the rules of all the games and sports 3. Preparing the students for the competition 4. Classify the students accordingly for various games and sports 5. Design and practice the new methods of technique and training.
32.	18BPDE4A	DSE IV - Research and Statistics in Physical Education	1. Identify the research problem in the field of physical Education and sports 2. Know to Summarize the various research literature 3. Understand and apply the basics of statistics in research. 4. Organize the samples and sampling techniques which is relevant to the study. 5. Apply the basics of statistics in minor research project for evaluation
33.	18BPDE4B	DSE IV - Sports Marketing	1. Understand the sports marketing environment and trends influencing marketers. 2. Understand the process and structure in sporting events 3. Analyzing and evaluating marketing strategies for internationalizing sport

			activity. 4. Converting ideas/business in the current market 5. Using technological tools to capitalize on business resources through marketing
34.	18BPDC28	Track and Field Events (Combined Events, Cross Country, Marathon and Road Races)	1. Demonstrate the concepts to throw further, run faster, and jump higher and longer. 2. Demonstrate proper form and technique while performing each event. 3. Explain the correct methodology for performing these events. 4. Verbalise the rules, regulations and interpretation of combined event. 5. Understand and follow safety guidelines for each event.
35.	18BPDC29	Team Games (Basketball, Volleyball, Softball &Hockey)	1. Demonstrate the concepts Basketball, Volleyball, Softball and Hockey. 2. Demonstrate proper form and technique while performing each game. 3. Explain the correct methodology for performing the games. 4. Verbalise the rules, regulations and interpretation of games. 5. Understand and follow safety guidelines for each event.
36.	18BPDC14, 23, 30, 31	Internship	1. Understand through an intensive experience the nature of schools as workplaces and their associated values, routines and cultures 2. Develop and refine their skills and professional capacity for classroom teaching in their subject specialisation 3. Demonstrate the ability to plan, implement, and evaluate effective teaching and learning strategies well grounded in education research and state and system policy frameworks 4. Demonstrate the ability to assess and report on student achievement 5. Demonstrate an understanding of professional and ethical practice

Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MPPE01 / 19PHPE01	Research Methodology and Advanced Statistics in Physical Education	1. Identify the research problem in the field of physical Education and sports 2. Know to Summarize the various research literature 3. Understand and apply the basics of statistics

			in research. 4. Organize the samples and sampling techniques which is relevant to the study. 5. Apply the basics of statistics in minor research project for evaluation
2.	19MPPE02 / 19PHPE02	Modern Trends in Physical Education	1. Plan, develop, communicate, implement, and evaluate technology-infused strategic plans. 2. Find out how successful were the teachers' efforts in contributing to the realization of the fundamental objectives of Physical Education. 3. Analyze the concepts and issues pertaining to Physical Education. 4. Create Psychological and Sociological aspects of the profession 5. Explain the contemporary issues and topics pertaining to Physical duration.
3.	19MPPE03 / 19PHPE03	SPORTS TRAINING	1. Design and implement a team sport practice session for healthy populations. 2. Observe and evaluate coaching styles, including coaching objectives and philosophy. 3. Apply current research and industry standards to programs that develop skill-related health and fitness in athletes. 4. Utilize and enhance team sports programming and teaching strategies learned through critical analysis of professionals in the industry. 5. Make recommendations for enhancing the training effect after analysing sports training plans.
4.	19MPPE04/ 19PHPE04	Yoga and Health	1. Understand Know about the basics of yoga 2. the Health benefits of Yoga 3. Apply the principles of Yoga to live healthy and active life style 4. Analyze the scientific techniques involved in yoga. 5. Develop the knowledge through practical implementation

School of Engineering

Courses Outcomes of Courses Offered in UG/PG Programmes

Department of Science and Humanities

S. No	Course Code	Title of the Course	Course Outcome
1.	18BESM01	Algebra and Calculus	1. Improve Their Skills To Solve Problems Of Matrices 2. Gain Knowledge In The Applications Of Differential Calculus 3. Determine Area And Volume Using Multiple Integrals 4. Solve Higher Order Linear Ordinary Differential Equations 5. Able To Apply Software Tools In Solving Problems In Matrices, Ordinary Differential Equations And Multiple Integrals
2.	18BESP01	Engineering Physics	1. Gain knowledge on the concepts and applications of Ultrasonics and Acoustics. 2. Acquire knowledge on the concepts and applications of Lasers and Fiber optics. 3. Understand the basics of crystals, their structures and crystal growth technique. 4. Gain knowledge on the concepts of quantum theory and its applications. 5. Understand the basics of vacuum, nano science and its devices.
3.	18BESP02	Physics Practicals	1. Gain technical skills in handling instruments and the calculation methods. 2. Apply the principle of elasticity and optics for various streams of engineering. 3. Gain practical knowledge on semiconductor, dielectric and magnetic properties of materials
4.	18BEMC01	Environmental Science	1. Will be familiar with various ecosystems and biodiversity and their importance in maintaining ecological balance. 2. Will be able to understand the relevance and importance of natural resources in the sustenance of life on earth. 3. Will be able to list different types of pollutions and their impacts on air, water and soil 4. Quality and suggest suitable measures to mitigate these impacts. 5. Will gain knowledge on the various environmental problems related to social issues and possible solutions to such problems.

			6. Will be able to correlate human population growth to environmental degradation.
5.	18BEHS01	English	1. Identify the techniques of reading and infer meanings 2. Comprehend the grammatical aspects of language usage 3. Understand and analyse data given in tables, charts and diagrams 4. Learn the basic techniques of presentation and public speaking skills 5. Design and create posters, banners, advertisements
6.	18BESM02	Laplace Transforms and Complex Variables	1. Apply Laplace transform techniques to solve ordinary differential equations. 2. Find the analyticity of function of complex variables and interpret its transformations. 3. Evaluate real and complex integrals using the Cauchy integral formula and the residue theorem 4. Find the vector differentials and interpret the relation between line, surface and volume integrals of vector quantities 5. Apply software with math tool box to solve problems involving vectors, matrices and complex integration problems.
7.	18BESC01	Engineering Chemistry	1. Will be familiar with the techniques used for water treatment. 2. Will be able to apply electrochemical concepts to solve corrosion problems. 3. Will have an understanding about the thermodynamic concepts and prediction of feasibility of chemical reactions. 4. Will be familiar with the properties of polymers and the techniques of polymerization. 5. Will acquire a basic understanding about spectroscopic techniques used for the analysis of compounds.
8.	18BESC02	Chemistry Practicals	1. Will acquire skills in measuring, recording and analysing the results. 2. Will be able to assess the quality of water. 3. Will develop skills in handling analytical instruments 4. Will acquire practical knowledge in concepts of corrosion
9.	18BEMC02	Constitution of India	1. Understand the history of Indian Constitution 2. Discuss the basic Constitutional rights and duties 3. Define the Organs of Governance

			4. Explain the role and responsibilities of Local Administration 5. Describe the Role and Functioning of Election Commission
10.	18BESM03	Transforms, Partial Differential Equations and Applications	1. Identify the need for a function to approximate as an infinite series to represent discontinuous function which occurs in signal processing, electrical circuits etc. 2. Recognise the need of various transforms and partial differential equations to solve complex problems in engineering fields like biomedical, communication etc. 3. Formulate mathematical models to analyse complex engineering problems
11.	18BESM04	Applied Statistics	1. Comprehend various distributions and to apply statistical concepts to solve problems involving large data 2. Apply the knowledge of testing of hypothesis in the real world problems 3. Test the goodness of fit, independence of attributes and able to apply various types of design of experiments in engineering problems
12.	18BESM05	Probability and Statistics	1. Apply the concepts of probability and standard distributions in engineering problems 2. Use statistical concepts to analyze and interpret engineering data 3. Demonstrate a solid understanding of fitting, sampling interval estimation and testing of hypothesis
13.	18BESM06	Probability and Random Processes	1. Comprehend the basic concepts of random variables, distribution, and processes for various application. 2. Apply the concepts of probability and various random processes in engineering applications with random signals 3. Recognise the significance of linear systems with random inputs
14.	18BESM07	Computer Aided Numerical Methods	1. Apply the knowledge of numerical methods in diverse fields of engineering sciences 2. Use various techniques in solving ordinary and partial differential equations related to engineering problems 3. Utilize knowledge and skills to develop codes for solving problems using software tools
15.	18BESM08	Probability and	1. Find solution for any number of equations

		Numerical Methods	with more unknowns satisfying the system of equations 2. Interpret various techniques and methods in solving ordinary and partial differential equations 3. Apply probability, random variables, discrete and continuous distributions to solve engineering problems
16.	18BESM09	Discrete Mathematics	1. Model and analyse computational processes using analytic and combinatorial methods 2. Apply knowledge of algebraic structures, the concept of lattices and Boolean algebra to design and analyse digital switching circuits 3. Compile complex mathematical scenarios using logical thinking and problem-solving skills
17.	18BESM10	Biostatistics	1. Recognize the importance of data collection and its role in determining scope of inference in food engineering 2. Demonstrate a solid understanding of interval estimation and hypothesis testing 3. Apply appropriate statistical methods for analysing one or two variables and interpret statistical results effectively
18.	18BEOE06	Graph Theory	1. Solve problems using basic graph theory a model real world problems using graph theory 2. Identify induced subgraphs, cliques, matchings, covers in graphs and determine whether graphs are Hamiltonian and/or Eulerian. 3. Predict and solve problems involving vertex and edge connectivity, planarity, crossing numbers, Permutations, combinations and generating functions.
19.	18BESM01	Algebra and Calculus	1. Improve their skills to solve problems of matrices 2. Gain knowledge in the applications of differential calculus 3. Determine area and volume using multiple integrals 4. Solve higher order linear ordinary differential equations 5. Able to apply software tools in solving problems in matrices, ordinary differential equations and multiple integrals
20.	18BESP01	Engineering Physics	1. Gain knowledge on the concepts and applications of Ultrasonics and Acoustics. 2. Acquire knowledge on the concepts and applications of Lasers and Fiber optics.

			3. Understand the basics of crystals, their structures and crystal growth technique. 4. Gain knowledge on the concepts of quantum theory and its applications. 5. Understand the basics of vacuum, nano science and its devices.
21.	18BESP02	Physics Practicals	1. Gain technical skills in handling instruments and the calculation methods. 2. Apply the principle of elasticity and optics for various streams of engineering. 3. Gain practical knowledge on semiconductor, dielectric and magnetic properties of materials
22.	18BEMC01	Environmental Science	1. Will be familiar with various ecosystems and biodiversity and their importance in maintaining ecological balance. 2. Will be able to understand the relevance and importance of natural resources in the sustenance of life on earth. 3. Will be able to list different types of pollutions and their impacts on air, water and soil 4. Quality and suggest suitable measures to mitigate these impacts. 5. Will gain knowledge on the various environmental problems related to social issues and possible solutions to such problems. 6. Will be able to correlate human population growth to environmental degradation.
23.	18BEHS01	English	1. Identify the techniques of reading and infer meanings 2. Comprehend the grammatical aspects of language usage 3. Understand and analyse data given in tables, charts and diagrams 4. Learn the basic techniques of presentation and public speaking skills 5. Design and create posters, banners, advertisements
24.	18BESM02	Laplace Transforms and Complex Variables	1. Apply Laplace transform techniques to solve ordinary differential equations. 2. Find the analyticity of function of complex variables and interpret its transformations. 3. Evaluate real and complex integrals using the Cauchy integral formula and the residue theorem 4. Find the vector differentials and interpret the relation between line, surface and volume integrals of vector quantities

			5. Apply softwares with math tool box to solve problems involving vectors, matrices and complex integration problems.
25.	18BESC01	Engineering Chemistry	1. Will be familiar with the techniques used for water treatment. 2. Will be able to apply electrochemical concepts to solve corrosion problems. 3. Will have an understanding about the thermodynamic concepts and prediction of feasibility of chemical reactions. 4. Will be familiar with the properties of polymers and the techniques of polymerization. 5. Will acquire a basic understanding about spectroscopic techniques used for the analysis of compounds.
26.	18BESC02	Chemistry Practicals	1. Will acquire skills in measuring, recording and analysing the results. 2. Will be able to assess the quality of water. 3. Will develop skills in handling analytical instruments 4. Will acquire practical knowledge in concepts of corrosion
27.	18BEMC02	Constitution of India	1. Understand the history of Indian Constitution 2. Discuss the basic Constitutional rights and duties 3. Define the Organs of Governance 4. Explain the role and responsibilities of Local Administration 5. Describe the Role and Functioning of Election Commission
28.	18BESM03	Transforms, Partial Differential Equations and Applications	1. Identify the need for a function to approximate as an infinite series to represent discontinuous function which occurs in signal processing, electrical circuits etc. 2. Recognise the need of various transforms and partial differential equations to solve complex problems in engineering fields like biomedical, communication etc. 3. Formulate mathematical models to analyse complex engineering problems
29.	18BESM04	Applied Statistics	1. Comprehend various distributions and to apply statistical concepts to solve problems involving large data 2. Apply the knowledge of testing of hypothesis in the real world problems 3. Test the goodness of fit, independence of attributes and able to apply various types of

			design of experiments in engineering problems
30.	18BESM05	Probability and Statistics	1. Apply the concepts of probability and standard distributions in engineering problems 2. Use statistical concepts to analyze and interpret engineering data 3. Demonstrate a solid understanding of fitting, sampling interval estimation and testing of hypothesis
31.	18BESM06	Probability and Random Processes	1. Comprehend the basic concepts of random variables, distribution, and processes for various application. 2. Apply the concepts of probability and various random processes in engineering applications with random signals 3. Recognise the significance of linear systems with random inputs
32.	18BESM07	Computer Aided Numerical Methods	1. Apply the knowledge of numerical methods in diverse fields of engineering sciences 2. Use various techniques in solving ordinary and partial differential equations related to engineering problems 3. Utilize knowledge and skills to develop codes for solving problems using software tools
33.	18BESM08	Probability and Numerical Methods	1. Find solution for any number of equations with more unknowns satisfying the system of equations 2. Interpret various techniques and methods in solving ordinary and partial differential equations 3. Apply probability, random variables, discrete and continuous distributions to solve engineering problems
34.	18BESM09	Discrete Mathematics	1. Model and analyse computational processes using analytic and combinatorial methods 2. Apply knowledge of algebraic structures, the concept of lattices and Boolean algebra to design and analyse digital switching circuits 3. Compile complex mathematical scenarios using logical thinking and problem-solving skills
35.	18BESM10	Biostatistics	1. Recognize the importance of data collection and its role in determining scope of inference in food engineering 2. Demonstrate a solid understanding of interval estimation and hypothesis testing 3. Apply appropriate statistical methods for

			analysing one or two variables and interpret statistical results effectively
36.	18BEOE06	Graph Theory	1. Solve problems using basic graph theory a model real world problems using graph theory 2. Identify induced sub graphs, cliques, matchings, covers in graphs and determine whether graphs are Hamiltonian and/or Eulerian. 3. Predict and solve problems involving vertex and edge connectivity, planarity, crossing numbers, Permutations, combinations and generating functions.

Department of Biomedical and Instrumentation Engineering (BIME)
B. E - BMIE

S. No	Course Code	Title of the Course	Course Outcome
1.	20BEHS03	Professional Ethics in Engineering	1. Apply ethics in society. 2. Discuss the ethical issues related to engineering. 3. Realize the responsibilities and rights in the society.
2.	20BESM03	Transforms, Partial Differential Equations and Applications for Biomedical Engineering (BMIE)	1. Develop Fourier series for periodic functions and apply it to solve boundary value problems 2. Transform a function in the time domain to another function in the frequency domain through Fourier Transform and apply Z transform in solving difference equations 3. Formulate and solve problems involving functions of several variables in terms of PDE.
3.	20BEBS01	Electron Devices and Circuits (ECE)	1. Explain the principles and structure of basic electronic devices. 2. Discuss the operation and VI Characteristics of electronic devices 3. Analyze gain and frequency responses of amplifier. 4. Discuss about the oscillators and its conditions
4.	20BEBS02	Devices and Circuits Practicals (ECE)	1. Plot the characteristics of electronic devices to understand their behavior. 2. Design, construct and test amplifier and oscillator circuits and interpret the results 3. Verify the theoretical concepts through simulation experiments.
5.	20BEBS03	Signals and Systems (ECE)	1. Characterize and analyze the properties of CT and DT signals and systems. 2. Represent CT and DT systems in the Frequency domain using Fourier analysis tools

			like CTFS, CTFT and DTFT. 3. Analyze CT and DT systems using Laplace transforms and Z Transforms. 4. Discuss the effects of signal sampling and convolution of systems.
6.	20BEBC01	Human Anatomy and Physiology	1. Summarize the basic structure and functions of cell. 2. Describe the anatomical position and structures of various human Body systems. 3. Discuss the physiological functions and regulations of various human body systems. 4. Explain the fundamental principles of mechanics in hematological systems.
7.	20BEBC02	Biomedical Sensors and Measurement Devices	1. Recall the characteristics of measuring instruments, transducers, photoelectric, piezoelectric sensors and display devices. 2. Describe the working principle of transducers, sensors, AC, DC bridges and display devices. 3. Use AC and DC bridges for relevant parameter measurement and employ the sensors, recording and display devices for biomedical applications. 4. Design the photoelectric and piezoelectric sensors.
8.	20BEBC03	Biomedical Sensors and Measurement Practicals	1. Analyse the characteristics of thermocouple, thermistor, RTD, piezoelectric and photoelectric transducers 2. Determine the values of unknown resistance, capacitance and inductance using various bridges. 3. Demonstrate the working of strain gauge, Load cell and opto- coupler and sketch its characteristic curve
9.	20BEMC03	Consumer Affairs	1. Discuss the concepts of consumer, markets, relevant laws and grievances and familiarize with the consumer protection laws and objectives 2. Apply Grievance Redressal Mechanism and contemporary issues in consumer affairs and knowledge of quality and standards under the Indian Consumer Protection Law and Case studies 3. Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment
10.	20BEHS07	Waste Management	1. Explain the segregation and disposal techniques with guidelines for various categorization of biomedical wastes. 2. Comprehend the cross infections through

			hospital generated wastes and its procedure for prevention with modern technology. 3. Express the awareness and seriousness in handling, controlling and monitoring of biomedical waste management and bioethics.
11.	20BESM06	Probability and Random Processes	1. Discuss the concepts of probability, random variables, discrete and continuous distributions and be able to apply these concepts in engineering applications 2. Comprehend the basic concepts of random processes for application in random signals 3. Recognize the significance of linear systems with random inputs
12.	20BEBC04	Medical Biochemistry	1. Explain the nature of biomolecules in human body 2. Identify the biomedical importance of biomolecules in human physiology and pathology 3. Evaluation methods of biomolecules in normal and abnormal/diseased conditions
13.	20BEBC05.	Virtual Instrumentation	1. Discuss the basics of Virtual Instrumentation Architecture, Graphical Programming, DAQ hardware and VI Toolsets and demonstrate the programming in labview 2. Use DAQ hardware for data acquisition and VI tool sets for analysis 3. Build graphical system design applications using labview
14.	20BEBC06	Pathology and Microbiology	1. Recall the structural, functional aspects of living organism and analyze the pathology of disease caused by various organisms. 2. Explain the etiology of tumors and summarize the different tissue processing techniques. 3. Discuss the methods for real time imaging and gain knowledge in various modes for spread of tumors. 4. Describe common immunological disorders and assays for diagnosis pathological agents.
15.	20BEBC07	Analog and Digital ICs (ECE)	1. Design and construct basic sequential circuits using universal gates. 2. Discuss the characteristics of Flip-flops, Counter and Op-amp. 3. Analyze linear and nonlinear applications of Op-amp and concepts of filter. 4. Design applications using ADC, DAC and PLL
16.	20BEBC08	Integrated Circuits Practicals (ECE)	1. Design and implement combinational and synchronous sequential circuits using universal

			gates. 2. Construct and test the circuits using operational amplifiers
17.	20BEBC09	Analog and Digital Communicati on (ECE)	1. Discuss the concepts of sources noise, analog, digital, data and pulse communication techniques. 2. Compare the techniques underlying in analog, digital, data and pulse communication. 3. Analyze source and error control coding and apply multi-user radio communication.
18.	20BEBC10	Medical Diagnostic Equipment	1. Describe the principle behind Cardiac, Electro-physiological, Clinical and Optical Equipment. 2. Illustrate the working, and differentiate between the diagnostic equipment. 3. Recognize the advantages and disadvantages of diagnostic applications 4. Design circuits, modify and identify the malfunctioning accessories in the equipment
19.	20BEBC11	Medical Therapeutic Equipment	1. Analyze the underlying principles of cardiac, respiratory, electrotherapy equipment and Lasers. 2. Illustrate the working, and differentiate between the therapeutic equipment 3. Recognize the advantages and disadvantages of therapeutic applications 4. Design circuits, modify and identify the malfunctioning accessories in the equipment
20.	20BEBC12	Diagnostic and Therapeutic Equipment Practicals	1. Measure different bioelectrical signals using various methods 2. Operate sphygmomanometer, phonocardiograph, digital audiometer and compute physiological parameters. 3. Demonstrate surgical diathermy, autoclave and drug delivery system
21.	20BEBC13	Microprocessor and Microcontrollers (ECE)	1. Interpret the architecture, instruction set, memory organization and addressing modes of the microprocessor, microcontrollers and ARM Processor. 2. Apply the knowledge of microprocessor, microcontroller and ARM for implementing assembly language programming. 3. Analyze the instruction set and development tools 4. Discuss the hardware interfacing peripheral devices and develop applications using ARM processor.
22.	20BEBC14	Microprocessor and Microcontroller Practicals	1. Implement the basic programming for Arithmetic and Logical operations in 8086 microprocessor and 805.1 Microcontrollers

			2. Interface different I/O devices with processor
23.	20BEBC15.	Biosignal Processing	1. Discuss the concepts of bio signals and its spectral/frequency representation. 2. Describe biological parameters, filtering techniques, classification and recognition algorithms. 3. Apply filtering and data reduction techniques on ECG signal. 4. Analyze bio signals with time/frequency domain representation.
24.	20BEBC16	Radiology and Nuclear Medicine	1. Recall the principle of radiation and working of X-ray equipment. 2. Discuss the working principle of digital radiography and computed tomography. 3. Demonstrate the application of radio nuclide imaging. 4. Explain the principle of radio therapy techniques and outline the methods of radiation safety.
25.	20BEBC17	ICU and Operation Theatre Equipment	1. Appraise the physics underlying the working of hospital equipment in ICU and OT. 2. Illustrate the working of machines used in ICU and operation theatres. 3. Explain the centralized systems in a hospital, sterilization and details of OT table and surgical lighting. 4. Discuss the concept of safety aspects incorporated in the design of medical equipment, hazards and machine control.
26.	20BEBC18	Control Systems (ECE)	1. Discuss the basic concepts of control systems and determine the mathematical modeling of control systems 2. Compute the time, frequency response and transfer function of the open loop and closed loop systems. 3. Design a control system to satisfy dynamic performance specifications using root-locus, and state-space techniques. 4. Analyze control systems for stability and steady-state performance
27.	20BEBC19	Special Medical Equipment Practicals	1. Demonstrate the working of Medical diagnostic equipment 2. Demonstrate the working of Medical therapeutic equipment and the maintenance procedure of medical equipment.
28.	20BEBC20	Digital Image Processing	1. Analyze the image fundamentals and mathematical transforms necessary for image processing.

			2. Discuss the operations of images, intensity transformations and spatial filtering. 3. Design algorithms for Image analysis using image enhancement, restoration and compression 4. Interpret image segmentation and representation techniques.
29.	20BEBC21	Digital Image Processing Practicals	1. Develop and implement algorithms to analyse the characteristics of images. 2. Perform edge detection and noise analysis operations in the images. 3. Apply image processing techniques to develop computer aided diagnosis system
30.	20BEHS11	Hospital Management	1. Discuss the role of hospital system and hospital information system. 2. State the specific services and departments in a hospital and the hospital information systems. 3. Explain the maintenance of patient records, medical equipment and the medical ethics followed in hospital.
31.	20BEBC23	Hospital Internship	1. State the ethics followed in hospital 2. Develop the technical and professional skills in hospital environment 3. Study and analyze the infection control and safety management in hospitals and Practice in servicing equipment.
32.	20BEBE01	Medical Physics	1. Recall the effects of ionizing radiation and non-ionizing radiation and express the radiation units. 2. Discuss the interaction of radiation and ultrasound with matter and its clinical applications. 3. Explain the principles of production of radionuclides, radiation dosimetry and radiation detection.
33.	20BEBE02	Medical Optics	1. Outline the fundamentals of optical properties of tissues, photonic instruments and laser. 2. Explain laser tissue interaction process and employ the surgical, diagnostic and therapeutic applications of laser. 3. Describe the principle and mechanism of photonic instruments, non-thermal diagnostic applications and therapeutic applications.
34.	20BEBE03	Biomaterials	1. Describe the characteristics, structure and classification with mechanical properties of biomaterials. 2. Identify materials for design of implants in hard tissue, soft tissue and organ replacement. 3. Explain about principle, working and maintenance of devices in the application of

			implant, replacements and artificial organs.
35.	20BEBE04	Biomechanics	1. Recall the basic principle of mechanics underlying in cardiac and orthopedics mechanics. 2. Illustrate the bio fluidic properties of blood and its biocompatibility role with implants and replacements. 3. Summarize the cardiac and orthopedic mechanics and applications confined to human.
36.	20BEBE05	Medical Imaging Techniques	1. Discuss the principles of radiographic, nuclear medical, ultrasonic, magnetic resonance imaging systems. 2. Describe the instrumentation and working of CT, Ultrasound, MRI, nuclear medical imaging systems. 3. Explain the image reconstruction, picture storage, biological effects of imaging systems and its applications.
37.	20BEBE06	Modeling of Physiological Systems	1. Recall the basics and parametric aspects of physiological systems. 2. Compare the engineering models of physiological systems with its biological functions. 3. Discuss the rheological properties of blood/blood cells and gas transport mechanism. 4. Apply modeling techniques in renal and pulmonary functions that influences waste removal/ oxygen transport respectively.
38.	20BEBE07	Rehabilitation Engineering	1. State the basics concepts of various modalities under rehabilitation engineering. 2. Analyze the implementation of assist devices in movement and speech impairments. 3. Discuss the underlying principles of wheel chair and other devices that assist/support human mobility. 4. Design cost effective computer aided customized assist devices for orthopaedic applications.
39.	20BEBE08	Bio MEMS and Nanotechnology	1. Describe the fundamental principle of MEMS, MOEMS, Micro fluidics and fabrication techniques of micro and nanotechnology. 2. Explain the working of MEMS sensor, actuators, MOEMS and Micro fluidics and its types. 3. Discuss about the recent applications of MEMS and nanotechnology in medicine.
40.	20BEBE09	Advanced Bioanalytical and	1. State the principle, working and significance of analytical instruments and recall the concepts

		Therapeutic Techniques	in analytical chemistry. 2. Describe the knowledge of enzymes as a diagnostic tool and ethical issues in human gene therapy. 3. Explain the concept, methods of radio-isotopic techniques and immunoassay. 4. Discuss about the concepts of nano-therapeutics in drug delivery.
41.	20BEBE10	Internet of Things	1. Explain the concepts of iot and analyze the various protocol for iot. 2. Discuss about Embedded iot and Choose a suitable physical device for stated iot challenge 3. Summarize the application of iot in real. Time scenario. 4. Describe the fundamentals of security in iot.
42.	20BEBE11	Cell and Tissue Engineering	1. Recall the basic concepts of cell mechanism and importance of stem cells in tissue engineering. 2. Discuss the physio-biological functions of cells and tissue in wound healing mechanism. 3. Explain the mechanism involved in interaction of biomaterials with cells and tissues. 4. State the importance of bioengineered scaffolds and its real time applications in tissue engineering.
43.	20BEBE12	Robotics and Automation in Medicine	1. Outline the basic concept of robotics and discuss the sensors, actuators, manipulators. 2. Explain the working principle underlying in sensors, actuators, manipulators with power source in robotics. 3. Discuss the applications of robotic systems in medical field.
44.	20BEBE13	Medical Ethics	1. Reproduce the basic principles of medical ethics, hospital accreditation, equipment and hospital safety standards in a global context. 2. Recall ethical theories, moral principles and the hospital Accreditation Standards and address the ethical issues. 3. Indicate the guidelines to obtain medical standards, medical equipment standards and safety in hospitals.
45.	20BEBE14	Machine Learning Techniques	1. Characterize machine learning algorithm as supervised, unsupervised and semi-supervised learning. 2. Interpret the underlying principles of linear, tree, probabilistic, dimensionality, reduction, evolutionary and graphical models. 3. Design a system that uses the appropriate graph models of machine learning and modify

			existing machine learning algorithms to improve classification efficiency.
46.	20BEBE15	Software design tools for Sensing and Control	1. Select an appropriate software tools for sensor and actuator design 2. Design, model and simulate various sensing and actuating mechanisms 3. Design controller and evaluate its performance through simulation and acquire knowledge on the selection and usage of hardware for real time implementation of controllers
47.	20BEBE21	Object Oriented Programming with C++ (CSE)	1. Demonstrate ability to implement one or more patterns involving realization of the concepts of Object Oriented Programming 2. Apply object oriented programming concepts to develop solutions to problems demonstrating usage of control structures, modularity, I/O and other standard language constructs 3. Develop solutions to problems demonstrating usage of encapsulation, inheritance and polymorphism, stream I/O, templates and operator overloading
48.	20BEBE22	Soft Computing	1. Analyze neural network architectures. 2. Describe various neural, fuzzy and Genetic algorithms. 3. Implement Neural, Genetic and Fuzzy algorithms for various classification applications. 4. Discuss the concept of genetic algorithm and applications of soft computing techniques
49.	20BEBE23	Speech Processing	1. Describe the concept of speech production mechanism and speech signal processing 2. Design algorithms for extracting parameters from the speech signal and implement speech modeling techniques. 3. Discuss simple pattern recognition applications of speech processing and Reproduce the concepts of speech synthesis and applications.
50.	20BEBE24	Embedded Systems (ECE)	1. Discuss the basic concepts of embedded system, networking, firmware development environment and RTOS. 2. Explain the embedded processor, communication protocols and product development. 3. Summarize RTOS based embedded system design and discuss case studies on embedded systems.
51.	20BEBE25	Medical Data Analytics	1. Outline the basics of health care data, statistical methods, computational tools, data modelling, supervised and unsupervised

			learning. 2. Apply and compare the regression and classification algorithms. 3. Use various data computational tools in health care.
52.	20BEBE26	Body Area Networks	1. Outline fundamental concepts of body area networks and discuss the hardware for BAN. 2. State the efficiency of communication and the security parameters. 3. Explain BAN for appropriate application in medicine and describe issues with BAN.
53.	20BEBE27	Telemedicine	1. Discuss the basic principle and technology underlying in the telemedicine. 2. Explain protocols behind encryption techniques for secure transmission of data. 3. Apply telehealth technologies in various fields of healthcare with its ethical and legal aspects.
54.	20BEBE28	Biometric Systems	1. Acquire a collective idea on various domains of biometrics. 2. Discuss the application of detection, recognition and neural network techniques in biometric subsystems. 3. Apply image-based models to classification techniques in biometrics. 4. Implement model-based approach and feature extraction techniques on visual and voice biometrics.
55.	20BEBE29	VLSI Design (ECE)	1. Outline the basic concepts of VLSI architecture and VHDL 2. Discuss the VLSI and VHDL fabrication technology and design a. Architecture. 3. Design CMOS digital circuits.
56.	20BEBE30	Wearable Systems	1. Explain the importance of wearable systems and it's real a time application. 2. Discuss the principle of various types of sensors and signal processing techniques for wearable systems. 3. Describe the applications of sensors and technical challenges in designing appropriate sensors. 4. Summarize the energy requirement and security issues related to wearable systems.
57.	20BEBE31	Medical Informatics	1. Recall about health informatics, patient records and bioethics. 2. State medical standards and explain about storage of medical data, databases used in health informatics and its functions. 3. Describe the recent trends in medical informatics.

58.	20BEBE32	Internet Technology (CSE)	1. Identify and examine the characteristics of routing protocols. 2. Design web pages using static and dynamic HTML. 3. Build dynamic web pages using Client-side programming and explore the concepts of database connectivity and web services.
59.	20BEBE33	Intellectual Property Rights	1. Recall the concepts and need for Intellectual Property. 2. Describe the registration of copy rights, trademarks, patents and industry and its agreements and legislations. 3. Discuss digital innovations and developments and identify the infringement and emerging issues.
60.	20BEBE34	Artificial Intelligence	1. Discuss the basics of Artificial Intelligence, machine learning and expert systems. 2. Explain problem solving methods and knowledge representation. 3. Analysis of algorithms related to Artificial Intelligence, machine learning and expert systems.
61.	20BEBE35	Electronics for Sensor Design	1. Design signal conditioning circuits for resistive and capacitive transducers 2. Explain the procedure to design conditioning circuits for temperature measuring transducers and design the transmitters for sensor interface **3.** Describe the design methods of data acquisition system and use artificial intelligence techniques for improving sensor characteristics.
62.	20BEBO01	Bioethics	1. Reproduce the basic principles of bioethics in a global context. 2. Discuss the regulatory framework governing ethical decisions in India and US. 3. State the ethical issues of malpractice and negligence and create awareness about support through health insurances. 4. Summarize ethical issues of confidentiality, patients' rights and the legal and 5. Public policy implications on inappropriate use of drugs.
63.	20BEBO02	Diagnostic Instrumentation	1. Describe on cardiovascular diseases, G.I Track, auditory and nervous disorders. 2. Discuss on diagnosis of cardiovascular diseases, G.I Track, auditory and nervous disorders. 3. Recall the working of electrocardiograph and the instruments for measurement of physiological parameters.

64.	20BEBO03	Internet of Things for Personal Healthcare	1. State the internet of things, its general characteristic and challenges. 2. Discuss iot based applications in healthcare and telemedicine. 3. Explain the motivation and model to deliver smart healthcare. 4. Design smart healthcare systems to track and monitor healthcare.
65.	20BEBO04	Telehealth Technology	1. Outline the basic concepts involved in telemetry-based transmission and reception. 2. State the principles of clinical telemetry and discuss the communication devices and networks of telemetry-based system. 3. Describe telemetry systems and retrieval of secure telemedicine-based information and its applications.

Department of Biomedical Instrumentation Engineering			
S. No	Course Code	Title of the Course	Course Outcome
1.	20VLEN01	Communicative English	1. Listen actively and comprehend the meaning 2. Make presentation individually or in groups 3. Use appropriate words in conversation 4. Gain knowledge in writing skills 5. Develop effective communicative skills
2.	20VMTC01	Anatomy and Physiology	1. Describe the structure, organelles and characteristics of a cell 2. Recognize the nature of cardio respiratory, digestive and other systems in the body 3. Identify the features of special organs
3.	20VMTC02	Fundamentals of Biomedical Instrumentation	1. Demonstrate the principle and characteristics of different transducers 2. Construct the circuits for the measurement of various parameters in medical devices 3. Test the signals using analog instruments and analyze its characteristics in different display devices.
4.	20VMTC03	Basic Electrical and Electronics Engineering	1. Familiarize with the electrical quantities and solve simple AC & DC circuits 2. Apply the knowledge of semiconductor device in various applications 3. Construct simple electronic circuits using logic gates.
5.	20VMTS01	Skill Training in Industry	1. Describe the characteristics of electronic components and familiarize with the usage of modern tools

			2. Apply the knowledge of wiring techniques for various applications 3. Follow the standards and safety operating procedure and practice the process of workflow& documentation in industry
6.	20VLEN01	Professional English	1. Use English skills with reasonable competence 2. Know the time management and goal setting in writing 3. Widen professional work habits with effective collaboration 4. Make wider public speaking skills 5. Develop creative and innovative skills through letters, posters, and invitation designs.
7.	20VMTC04	Computer Fundamentals	1. Familiarize with the hardware & software tools required for the computation task and Remember the concepts of computer terminologies 2. Apply different office tools to create, manipulate and retrieve data's 3. Demonstrate the web application and able to design a web page and analyze the security of data's through network and communication
8.	20VMTC05.	Sensors and Measurements	1. Acquire the knowledge of origin of bio signals and its recording set up 2. Measure the quantities using various transducers and analyze its characteristics 3. Familiarize with the errors associated with measurements
9.	20VMTC06	Microprocessor and its Applications	1. Describe the architecture and instruction set of microprocessor, microcontroller and embedded systems 2. Distinguish the hardware and software interrupts and interfacing 3. Design and implement simple programs for various applications
10.	20VMTS02	Skill Training in Industry	1. Describe the characteristics of electronic components and familiarize with the usage of modern tools 2. Apply the knowledge of soldering techniques for various applications 3. Follow the standards and safety operating procedure and practice the process of workflow & documentation in industry
11.	20VMTC07	Medical Diagnostic Equipment	1. Gain knowledge in scope of medical instrumentation and in acquisition of bio signals 2. Describe the equipment used for diagnosis

			in various applications 3. Demonstrate the medical device and record and analyze the signals.
12.	20VMTC08	Medical Therapeutic Equipment	1. Describe the therapeutic devices for various applications 2. Explain the use of therapeutic LASERs and analyze its health hazards 3. Demonstrate the sterilization methods
13.	20VMTC09	ICU and Operation Theatre Equipment	1. Classify the intensive care devices and its applications 2. Analyze the safety aspects during the handling of operation theatre equipment 3. Practice protection standards against electrical hazards
14.	20VMTS03	PCB Designing	1. Familiarize with the knowledge of PCB designing 2. Design a circuit and identify the faults using OrCAD platform **3.** Demonstrate circuits for medical applications using Multisim
15.	20VMTS04	Skill Training in Industry	1. Demonstrate the ICU and operation theatre equipment and explain the safe handling of machine and tools 2. Illustrate the calibration procedures and apply the standards and safety operating procedure in industry 3. Perform equipment maintenance and documentation
16.	20VMTC10	Electrotherapy and Physiotherapy Equipment	1. Describe the fundamentals of electricity in therapy based on its applications 2. Illustrate the purpose of orthotic device and analyze its contraindications 3. Familiarize with community based rehabilitation
17.	20VMTC11	Life Support Device	1. Familiarize with the fundamentals of intensive care equipment 2. Explain the importance of life support and assist devices 3. Demonstrate the operation of extra corporeal circulating device
18.	20VMTC12	Radiology and Medical Imaging	1. Classify the source and characteristics of ionizing and non ionizing radiation 2. Describe the different types of medical imaging techniques 3. Explain the principles and applications of radio isotopes for diagnosis & therapy and identify the need for radiation monitoring for protection from hazards
19.	20VMTS05.	PCB Fabrication and Testing	1. Describe the process involved in fabrication of Printed Circuit Boards and

			familiarize in the usage of modern tools for fabrication 2. Construct the circuits and apply fault finding techniques for various biomedical applications 3. Acquire entrepreneurship skills in PCB manufacturing
20.	20VMTS06	Skill Training in Industry	1. Describe the operating principle of radiology and imaging equipment 2. Demonstrate the safe handling of machine and tools and illustrate the calibration procedures 3. Acquire skills in equipment maintenance and documentation and apply the standards and safety operating procedure in industry
21.	20VMTC13	Telehealth Technology	1. Explain the basic principles of Telehealth technology and the role of telecommunication in Healthcare 2. Identify technology infrastructure required to provide Telehealth options for healthcare 3. Make use of the techniques for successful Telehealth utilization
22.	20VMTS07	Troubleshooting of Medical Equipment - I	1. Acquire the knowledge of troubleshooting methods and apply the skills in equipment maintenance & documentation 2. Follow troubleshooting procedures as per the manufacturers recommendation 3. Apply standards and safety codes and evaluate the performance of the device
23.	20VMTS08	Skill Training in Industry	1. Explain the safe handling of machine and modern usage of tools 2. Acquire the knowledge of calibration procedures and able to troubleshoot the faults 3. Acquire skills in equipment maintenance and documentation and apply the standards and safety operating procedure in industry
24.	20VMTC14	Hospital System Management	1. Acquire knowledge on planning, designing and organization of hospitals and to familiarize the clinical and administrative services 2. Illustrate the biomedical waste management and infection control system 3. Develop an hospital information systems and practice the standards and medical ethics
25.	20VMTS10	Troubleshooting of Medical Equipment - II	1. Acquire the knowledge of troubleshooting methods and apply the skills in equipment maintenance & documentation 2. Follow troubleshooting procedures as per

			the manufacturers recommendation 3. Apply standards and safety codes and evaluate the performance of the device
26.	20VMTS11	Skill Training in Industry	1. Describe the roles and responsibilities of a biomedical supervisor and apply administrative and managerial skills 2. Follow purchase procedures for inventory management and apply best practices to achieve quality 3. Practice a safe, healthy and secure environment

B. E. CIVIL ENGINEERING			
S. No	Course Code	Title of the Course	Course Outcome
1.	20BEHS01	Professional English-I	1. Create organized academic and professional writing 2. Develop aural competency and oral fluency of learners 3. Achieve proficiency in the effective use of language in various authentic career-related situations.
2.	20BESM01	Algebra and Calculus	1. Apply the concepts of Algebra and calculus in engineering fields like computer science, communication, food technology etc 2. Develop mathematical models to interpret and solve engineering problems 3. Appreciate the need of software tools to solve higher order linear ordinary integral and differential equations used in real world problems.
3.	20BESP01	Engineering Physics	1. Identify the basic concepts of Physics applied in Engineering. 2. Discuss the theory and demonstrate the methods involved in Engineering Physics. 3. Apply the theoretical ideas of various processes and techniques of Physics in Engineering and Technology.
4.	20BESC01	Engineering Chemistry	1. Identify chemistry principles related to engineering concepts. 2. Analyse scientifically various chemistry related problems in engineering field based on theoretical concepts, experimental procedures and mechanism. 3. Predict potential applications of chemical principles and knowledge acquired in order to become good engineers and innovators
5.	20BESP02	Physics Practicals	1. Conduct experiments and interpret the results. 2. Verify the knowledge gained in theory with practical results.
6.	20BESC02	Chemistry Practicals	1. Identify carpentry tools & components in various joints and pipe fittings used for plumbing works and demonstrate Half and T Lap joints in carpentry work 2. Understand basic connections of wiring, continuity testing, arc welding, centrifugal pumps, Characteristics of PN Junction

			Diode, Zener Diode.
7.	20BEES01	Basic Electrical Engineering	1. Comprehend the basic concepts of electric and magnetic circuits. 2. Differentiate properties and Analyse AC as well as DC circuits and various machines. 3. Apply the concepts and choose appropriate machines and protection methods for various engineering Installations/Applications.
8.	20BEES04	Programming for Problem Solving using C and Python	1. Describe and use the data types, expressions, functions, control statements, strings in C and Python programming. 2. Write user defined functions and implement different Operations on arrays, Strings, pointers and classes in python. 3. Identify and use suitable C and python programs to solve real life problems.
9.	20BEES02	Engineering Graphics	1. To draw orthographic projection of one dimensional, two dimensional and 3 dimensional objects. 2. To prepare isometric and perspective sections of simple solids 3. To demonstrate basic skills in computer aided drafting.
10.	20BEES03	Basic Electrical Engineering Practicals	1. Analyze AC and DC circuits and verify networks theorem 2. Design and demonstrate wiring for various loads. 3. Test transformers and electrical machines
11.	20BEES06	Programming for Problem Solving using C and Python Practicals	1. Experiment the fundamental concepts, control statements and functions in C and Python programming. 2. Apply Structures, Union and File concepts in C Programming to provide solutions to solve real world applications. 3. Analyze a problem and use appropriate language in C and python programs to solve it.
12.	20BEMC01	Environmental Science	1. Correlate the complex relationship between natural environment and human activities. 2. Predict the consequences of human actions on the web of life, global economy and quality of life. 3. Identify suitable measures to solve environmental problems.
13.	20BEHS02	Professional English-II	1. Discuss about housing policies, programme, planning, designing and finance. 2. Discuss about construction techniques and cost effective materials.

14.	20BESM02	Laplace Transforms and Complex Variables	1. Recognize the need of Laplace transform techniques, Complex integrals and Vector Calculus in engineering fields like computer science, biomedical, communication etc. 2. Apply the knowledge of Laplace transforms and Complex variables in solving complex engineering problems. 3. Assess complex variables and evaluate complex integrals that arise in engineering Fields
15.	20BEES05	Workshop Practicals	1. Analyze AC and DC circuits and verify networks theorem 2. Design and demonstrate wiring for various loads. 3. Test transformers and electrical machines
16.	20BEHS03	Professional Ethics in Engineering	1. Describe the ethics of human values in society 2. Discuss engineering ethics 3. Explain code of ethics 4. Point out safety, rights and their responsibilities in society 5. Describe the global and environmental issues in society
17.	20BESM04	Transforms, Partial Differential Equations and Applications for Civil Engineering	1. Identify the need for a function to approximate as an infinite series to represent discontinuous function which occurs in signal processing, electrical circuits etc. 2. Recognize the need of various transforms and partial differential equations to solve complex problems in engineering fields like biomedical, communication etc. 3. Formulate mathematical models to analyse complex engineering problems
18.	20BEVS01	Mechanics of Solids	1. Analyse system of forces, vector & scalar forces, forces in rigid bodies, forces due to friction 2. Calculate centroid and moment of inertia for different solid sections. 3. Outline the concept of stress and strain
19.	20BEVS02	Computer Aided Civil Engineering Drawing	1. Demonstrate the importance of planning and orientation of buildings 2. Draft the plan, elevation and sectional views of the buildings, industrial structures, framed buildings and also joinery details using computer software tools 3. Outline the concept of BIM.
20.	20BEVC01	Construction Materials	1. Outline the manufacturing process, its types and various characteristics of construction

			materials used in construction of structures. 2. Conduct tests and interpret the results of tests conducted to check the various properties of construction materials
21.	20BEVC02	Mechanics of Fluids	1. Compile and measure various properties of fluid pressure 2. Solve problems related to continuity and energy equation in flow through conduits 3. Perform dimensional analysis for fluid flow problems
22.	20BEVC03	Surveying	1. Identify and apply various surveying instruments for linear and angular measurements. 2. Compute various components of curve 3. Discuss about the functions and applications of total station and GPS
23.	20BEVC04	Survey Practicals	1. Execute various measurements of land using chain and theodolite 2. Compute measurements of field using total station and GPS
24.	20BEMC03	Consumer Affairs	1. Explain the concepts of consumer, markets, relevant laws and grievances 2. Identify and use with the consumer protection laws, objectives and concepts 3. Awareness of Grievance Redressal Mechanism under the Indian Consumer Protection Law and Case studies 4. Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment 5. Awareness of contemporary issues in consumer affairs and knowledge of quality and standards
25.	20BEHS08	House Planning and Management	1. Discuss about housing policies, programme, planning, designing and finance. 2. Discuss about construction techniques and cost effective materials.
26.	20BEVS03	Energy Science and Engineering	1. Discuss basic concepts and design of energy efficient buildings. 2. Explain Passive Solar Heating & Cooling, Day Lightening & Electrical Lightning and heating, heat control and ventilation. 3. Discuss design parameters for control zones
27.	20BEVC05	Strength of Materials	1. Analyze determinate and indeterminate pin jointed and rigid jointed frames for different types of loads to determine shear force and bending moment 2. Analyse beams for different types of loads

			to determine deflection at various locations, bending stress and stress distributions for various cross sections and complex stress for any material 3. Analyse columns for different end support conditions, thick cylinders for external loads and plane truss for joint loads
28.	20BEVC06	Applied Hydraulics and Hydraulic Machinery	1. Determine flow measurements in hydraulic devices and open channels. 2. Identify an effective section for flow in different cross sections 3. Evaluate the performance of pumps and turbines
29.	20BEVC07	Highway Engineering	1. Discuss the classification of highways and its implementation in geometric design standards for streets and highways and various desirable properties of highway materials 2. Design flexible and rigid pavements 3. Identify and use appropriate maintenance methods to control pavement failure
30.	20BEVC08	Mechanics of Soils	1. Discuss about soil classifications and determine index properties of soil 2. Analyse soil water behaviour and stress distribution in soils due to compaction and consolidation 3. Determine the shear strength of soils and stability of slopes
31.	20BEVC09	Water Resources and Irrigation Engineering	1. Plan and manage water resources 2. Identify and apply different irrigation methods 3. Design components of water distribution and irrigation structures
32.	20BEVC10	Hydraulics and Hydraulic Machinery Practicals	1. Demonstrate and measure discharge in pipes, venturimeter, orificemeter and notches 2. Demonstrate and perform experiment to find characteristic curves of various pumps and turbines
33.	20BEVC11	Soil Mechanics Practicals	1. Determine and analyse engineering properties of soil and classify them
34.	20BEVC12	Structural Analysis	1. Rigid and pin jointed plane frames for static loads such as external loads, settlement loads, lack of fit and temperature changes using slope deflection, moment distribution and matrix methods. 2. Analyse determinate flexural members and plane truss for moving loads and sketch influence line diagram for indeterminate beams using Muller Breslau Principle

			3. Analyse two hinged and three hinged arches for deflection and stresses due to application of external and moving loads.
35.	20BEVC13	Environmental Engineering I	1. Discuss about source of water and its water characteristics and materials used for conveyance system 2. Select and Design various components of the water supply system including conveyance, primary and advanced water treatment units. 3. Identify, design and analyse water distribution system.
36.	20BEVC14	Foundation Engineering	1. Explore soil investigation and demonstrate field tests needed for safe design of foundation . 2. Analyse and design various types of shallow and deep foundation 3. Analyse retaining walls for its stability.
37.	20BEVC15	Design of RC Elements	1. Discuss the design concepts of RC materials. 2. Design RC beams, slabs, columns and footing.
38.	20BEVC16	Construction Techniques and Practices	1. Identify and deploy the various building components in detail. 2. Select and explain suitable construction techniques for various construction works. 3. Select the appropriate machineries for various construction works.
39.	20BEVC17	Construction Technology Testing Practicals	1. Prepare centre line plan, foundation plan, and plumbing layout for a building 2. Apply different types of brick bonds in the field. 3. Demonstrate the levels of building components using plumbs in the field.
40.	20BEVC18	Strength of Materials Practicals	1. Determine the strength characteristics such as tensile, torsion, impact, hardness and compressive strength of construction materials. 2. Evaluate bending properties for wood and steel. 3. Evaluate deflection character of RC beams.
41.	20BEVC19	Design of Steel Structures	1. Compile design concepts of steel sections and connections 2. Compare and design framed connections, built-up beams, compression members, lacings, battens and column splices, plate girders and gantry girders, elements of roof truss and joints.
42.	20BEVC20	Environmental Engineering II	1. Identify generation and conveyance of waste water and analyse the characteristics

			of sewage. 2. Select and Design various components of sewerage system includes sewer, primary and secondary treatment units. 3. Explain various disposal methods of sewage and sludge management.
43.	20BEVC21	Environmental Engineering Practicals	1. Determine and analyse the characteristics of water and sewage samples.
44.	20BEVC23	Construction Management	1. Prepare contract, tender document and schedule of construction projects and plan & estimate the resource requirements. 2. Analyze cost control monitoring and accounting. 3. Execute quality control and safety during execution.
45.	20BEVC24	Estimation and Quantity Surveying	1. Prepare quantity estimation, cost estimation for a building and other structures 2. Prepare report on specifications for buildings, culverts, roads, water supply and sanitary installation, tube wells and open wells. 3. Evaluate value of building and land.
46.	20BEVC25	Concrete and Highway Practicals	1. Evaluate quality of constituents of hardened and fresh concrete. 2. Evaluate quality of bitumen for pavement construction materials
47.	20BEMC04	Disaster Management	1. Categories types of disaster and its causes, assess its vulnerability, classify methods for risk reduction, and discuss methods for mitigation. 2. Formulate disaster management problems and carry out field works to find the solution.
48.	20BEVE01	Smart Materials and Smart Structures	1. Identify smart materials and structures. 2. Measure strain using electrical strain gauges. 3. Identify and use various sensing technologies, actuators, signal processors and control systems for smart structures.
49.	20BEVE02	Concrete Technology	1. Ensure and interpret the properties of concrete and its constituents 2. Identify and utilize suitable admixture for concrete. 3. Design concrete mix for the required strength.
50.	20BEVE03	Advanced Structural Analysis	1. Analyse beams using energy principle theorems and plastic analysis concept. 2. Analyse space truss and cable structures. 3. Analyse pin jointed frame and rigid jointed

			frame using finite element methods.
51.	20BEVE04	Computer Aided Design of Structures	1. Plan structural drawing for structural elements using CAD software and apply expert systems to analyse them. 2. Interpret results of structural analysis using computer tools 3. Prepare algorithms and optimization techniques for the analysis and design of steel and RC structures.
52.	20BEVE05	Repair and Rehabilitation of Structures	1. Apply maintenance & repair strategies and special concretes for damaged structures. 2. Evaluate strength and durability characteristics of concrete. 3. Describe and implement techniques for repair, retrofit, protect and to demolish structures.
53.	20BEVE06	Design of Concrete Structures	1. Discuss and apply the concept of yield line theory in design of structures. 2. Design and Analyze counter fort & cantilever retaining walls, water tanks and bridges and deep beams.
54.	20BEVE07	Bridge Structures	1. Discuss the concepts involved in design of different types of bridges. 2. Analyse and Design of RCC & PSC and steel bridges. 3. Identify and explain bridge substructures and its foundation.
55.	20BEVE08	Pre stressed Concrete Structures	1. Discuss the concepts of pre stressing and assess its behaviour on structures 2. Design flexural members for shear and deflection 3. Analyse and design continuous & composite beams for other miscellaneous structures
56.	20BEVE09	Storage Structures	1. Design steel, concrete water tanks and pre stressed concrete water tanks and its components 2. Design steel & concrete bunkers & silos and its components
57.	20BEVE10	Tall Buildings	1. Outline the design philosophies, computing load for construction materials used in special concretes and for tall buildings 2. Analyse the behavior of various structural system and its design methods 3. Compute stability analysis using various methods for tall buildings
58.	20BEVE11	Prefabricated Structures	1. Explain the principles and behavior of components of prefabricated structures 2. Design and detailing of joints of prefabricate structures and its components

			3. Design prefabricated structure for abnormal loads
59.	20BEVE12	Experimental Analysis of Stress	1. Identify and discuss the characteristics of different types of strain gauges, methods of measuring strain and coating & its applications 2. Analyze the behavior of 2-D photo elasticity 3. Execute model analysis
60.	20BEVE13	Finite Element Analysis	1. Gain knowledge on various methods of FEA and its element properties. 2. Analyze truss, plane frames, grids, space frame and 3D solids. 3. Apply FEA for various applications.
61.	20BEVE21	Environmental Impact Assessment	1. Explain about significance, various stages, types and methods of EIA 2. Assess environmental impacts on land, water, air, social etc., and outline the mitigation measures and implement ISO guidelines in industries 3. prepare environmental impact assessment reports for various projects
62.	20BEVE22	Industrial Waste Management	1. Identify and explain about various Industrial waste pollution, characteristics, treatment, and waste management approaches & audit 2. Identify and discuss hazardous waste management.
63.	20BEVE23	Air Pollution Management	1. Identify and explain the source, environmental impact of air pollution and equipment for air pollution control 2. Estimate quantitative measurements of air pollution and implement town planning rules and regulation with respect to air pollution 3. Discuss the ill effects and prevention of noise pollution
64.	20BEVE24	Municipal Solid Waste Management	1. Identify and explain about source, characteristics, impact, on-site & off-site storage and processing methods of municipal solid waste 2. Analyze collection systems, routes and location of transfer station 3. Discuss about engineered landfill site design and operation for disposal of municipal solid waste
65.	20BEVE31	Earthquake Geotechnical Engineering	1. Evaluate the occurrence of earthquake & its mechanism and seismic hazard analysis 2. Analyse seismic soil parameters, measure dynamic properties of soil and analyse

			liquefaction of soil 3. Analyze seismic waves using ground response spectrum
66.	20BEVE32	Ground Improvement Techniques	1. Identify and explain the selection of suitable ground improvement techniques, different dewatering techniques and various in-situ treatment of cohesionless and cohesive soils. 2. Identify and apply suitable stabilization methods and different grouting techniques for soil.
67.	20BEVE41	Hydrology	1. Explain about precipitation and estimate rainfall intensity, duration & frequency and losses of precipitation 2. Prepare the unit hydrograph for surface runoff 3. Identify and implement flood & channel routing and aquifers & its tests
68.	20BEVE42	Water Resources Systems Analysis	1. Identify sources for the collection of data and develop simple modelling with respect to water resources. 2. Optimize and develop deterministic simulation model for water resources application 3. Apply bellman's optimality criteria Problem solution
69.	20BEVE43	Groundwater Engineering	1. Estimate ground water table potentials and analyse well potentials and ground water quality 2. Explain ground water management schemes and methods of conservation
70.	20BEVE51	Traffic Engineering and Management	1. Identify the entities necessary for planning and operation of traffic facilities 2. Design and analyse traffic studies and traffic management system. 3. Discuss all the issues related to traffic safety and environment
71.	20BEVE52	Pavement Engineering	1. Analyse stresses in different types of pavements and design flexible and rigid pavement based on IRC guidelines. 2. Discuss various techniques to evaluate performance of pavements 3. Evaluate the pavement stabilization methods
72.	20BEVE53	Railway Engineering	1. Analyse elements of railway planning, geometric design and railway station 2. Design railway networks and stations 3. Identify and discuss concepts on signalling, interlocking g and railway maintenance
73.	20BEVE54	Airport, Docks and	1. Analyse various components of an airport,

		Harbour Engineering	Dock and Harbour 2. Outline the design concepts of components of Airport, Dock and Harbour 3. Plan for required signals and navigational aids
74.	20BEVE61	Advanced Construction Techniques	1. Identity, discuss and implement substructures, superstructures & special structures construction techniques 2. Identify and implement Rehabilitation and Strengthening techniques and Demolition techniques
75.	20BEVE62	Valuation of Immovable Properties	1. Discuss the principles of valuation of Buildings and free hold and lease hold properties 2. Evaluate the methods of valuation for apartments, banks and taxation
76.	20BEVE63	Construction Planning and Scheduling	1. Discuss about concepts of construction planning and Schedule the construction activities 2. Evaluate and control quality, safety during construction and forecast the cost in a construction. 3. Organize information in Centralized database Management systems.
77.	20BEVE64	Building Services	1. Identify and apply various types of machineries and electrical systems adopted in buildings 2. Explain the principles and Design of lighting in buildings 3. Identify and discuss the requirements of HVAC and Fire safety in buildings
78.	20BEVE65	Total Quality Management	1. Explain quality concepts and philosophies of TQM 2. Apply and analyze TQM principles, concepts of continuous improvement, quality tools, management tools and statistical fundamentals to improve quality 3. Identify and discuss the quality systems and procedures adopted
79.	20BEVE66	Principles of Management	1. Explain the principles and functions of management 2. Identify and analyse managerial functions like planning, organizing, directing and controlling
80.	20BEVO01	Vaastu Shastra and Remedial Vaastu	1. Explain the basics of Vaastu shastra and astronomy 2. Plan residential and commercial building as per Vaastu shastra 3. Identify and rectify the defects in building plan with respect to Vaastu shastra

81.	20BEVO02	Basics of Interior Design	1. Discuss the basics of design needed for good design, characteristics elements of design, interior furnishing Design interiors for a building 2. Identify and use materials required for interior design
82.	20BEVO03	Green Building Concepts	1. Discuss the concepts and principles of green buildings, elements and its operators 2. Identify and apply green initiatives in buildings and green provisions for smart building 3. Identify and rate green materials
83.	20BEVO04	Fire Safety and Remedial Measures	1. Discuss the importance, elements of fire and safety 2. Identify and apply the measures to fire behaviour, preparedness to fire safety and their remedial measures

Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PHCVE1/ 19PHBME1/19PHCSE1/ 19PHELE1/ 19PHFPE1	Research Methodology for Engineers	1. Reproduce the basic concepts of research process 2. Illustrate the data collection and presentation 3. Analyze and interpret data. 4. Explain the algorithmic research. 5. Identify the journal with impact factor and write a research paper.
2.	19PHCVE2	Green Buildings	1. Incorporate the concepts of green building and reduce carbon foot print. 2. Identify and compare cost and performance of building materials with recycled components, materials with low embodied energy and salvaged materials and incorporate them into design. 3. Integrate the importance of green building strategies and science in construction. 4. Design and execute green buildings as per the rules. 5. Recognize and demonstrate methods for green remodeling and management and green rating

			system compliance.

Computer Science and Engineering			
S. No	Course Code	Title of the Course	Course Outcome
1.	20BEES04	Programming forProblem Solving using C and Python	1. 1Describe and use the data types, expressions, functions, control statements, strings in C and Python programming 2. Write user defined functions and implement different Operations on arrays, strings, pointers and classes in Python 3. Identify and use suitable C and python programs to solve real life problems.
2.	20BEES06	Programming for Problem Solving using C and Python Practicals	1. Experiment the fundamental concepts, control statements and functions in C and Python programming. 2. Apply Structures, Union and File concepts in C Programming to provide solutions to solve real world applications. 3. Analyze a problem and use appropriate language in C and python programs to solve it.
3.	20BEHS05.	Engineering Management and Professional Ethics	1. Comprehend the need of Project management in effective organization, project documentation and budgeting 2. Apply organizational structure, scheduling and cost estimate in preparing engineering projects 3. Apply ethics in society related to engineering and realize the responsibilities and rights in the Society
4.	20BESM08	Probability and Statistics	1. Apply the concepts of probability and standard distributions in engineering problems. 2. Use statistical concepts to analyze and interpret engineering data. 3. Demonstrate a solid understanding sampling interval estimation and testing of Hypothesis.
5.	20BEOS01	Computer Architecture	1. Recognize the design of the various units of digital computers and Interpret the logic design of fixed-point add, subtract, multiply and divide hardware and instantiating the concepts of fast adders, high speed multiplier, booth multiplier and carry save addition techniques 2. Illustrate various memory components and memory mapping techniques including Cache and virtual memory for increasing the memory bandwidth and high performance and Choose different ways of communication with I/O devices using various interconnection

			networks including bus structures. 3. Infer the processor concepts by introducing multi-core, cluster , shared and distributed architecture concepts.
6.	20BEOS02	Analog and Digital Electronics	1. Design and use semiconductor devices and operational amplifier for various applications in computer and peripherals. 2. Design and implement combinational and data processing. 3. Apply the Knowledge gained in the design of sequential circuits.
7.	20BEOC01	Data Structures and Algorithms	1. Compare different programming methodologies and define asymptotic notations to analyse performance of algorithms. 2. Design programs using a variety of linear and non-linear data structures such as stacks, queues, binary trees, search trees, heaps, graphs, and B-trees. 3. Analyze and apply suitable algorithms, stacks, queues, sorting, searching and hashing technique to solve problems.
8.	20BEOC02	Database Management Systems	1. Identify and create various data models along with SQL and improve the database design by using normalization techniques. 2. Summarize various query evaluation and optimization techniques along with Transaction processing and Concurrency control mechanism. 3. Interpret and implement virtualise through redundant arrays and processing through distributed database concepts as well as XML database techniques.
9.	20BEOC03	Data Structures and Algorithms Practicals	1. Perform various stack, queue and linked list operations and develop simple applications. 2. Solve trees and graph related problems. 3. Implement various sorting and searching algorithms.
10.	20BEOC04	Database Management Systems Practicals	1. Apply the basic concepts of Database Systems and Applications. 2. Design and implement a database schema for a given problem-domain. 3. Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system.
11.	20BEMC03	Consumer Affairs	1. Understand the concepts of consumer, markets, relevant laws and grievances 2. Awareness of Grievance Redressal Mechanism under the Indian Consumer Protection Law and Case studies 3. Awareness of contemporary issues in consumer

			affairs and knowledge of quality and standards
12.	20BESM10	Discrete Mathematics and Linear Algebra	1. Apply mathematical logic and counting principles in problem solving 2. Analyse basic discrete structures and algorithms using algebraic techniques 3. Apply the knowledge of linear equations and vector spaces in solving engineering Problems
13.	20BEOC05	Software Engineering	1. Identify and formulate various software process modelling and methodologies through the systematic approaches and diagnostic tools. 2. Analyse software engineering projects through software design and construction using Object Oriented methodologies, testing and management to deliver robust software components. 3. Determine various software testing methods, tools and appropriate project management approach in successful software development.
14.	20BEOC06	Artificial Intelligence	1. Compare AI with human intelligence and traditional information processing and discuss its strength, limitations and applications to human centered problems. 2. Identify and formulate algorithms related to searching and problem solving methods. 3. Apply appropriate techniques of AI to solve the societal problem using various logic and knowledge representation techniques and interpret the knowledge in various domains using software agents.
15.	20BEOC07	Microprocessors and Microcontrollers	1. Distinguish and analyze the properties of Microprocessors& Microcontrollers. 2. Analyze the data transfer information through serial & parallel ports. 3. Interpret their practical knowledge through IOT processor.
16.	20BEOC08	Design and Analysis of Algorithms	1. Identify different type of algorithms and techniques to Analyse complex engineering problems. 2. Investigate, predict and solve problems using algorithm design methods such as the greedy method, divide and conquer, dynamic programming, backtracking and branch and bound 3. Assess the appropriate data structure and algorithm design method for a specified Application.
17.	20BEOC09	Operating Systems	1. Interpret the working of an OS as a resource manager, file system manager, process manager, memory manager and I/O manager and methods used to implement the different parts of OS.

			2. Analyse the theory and implementation of processes, resource control (concurrency etc.), physical and virtual memory, scheduling. 3. Evaluate the requirement for process synchronization and coordination, deadlock, File structures handled by operating system
18.	20BEOC10	Operating Systems Practicals	1. Design and write Linux commands and shell programming. 2. Choose the best CPU scheduling algorithms for a given problem instance. 3. Identify the performance of various page replacement algorithms and develop algorithms for deadlock avoidance, deadlock detection and file allocation strategies.
19.	20BEOC11	Artificial Intelligence Practicals	1. Write python code to solve wide range of real-world problems. 2. Incorporate the usage of libraries and tools to develop sustainable solutions. 3. Design intelligent solutions incorporating AI trends and techniques.
20.	20BEOC12	Big Data Analytics	1. Describe the basics of big data analytics and exposure to state-of-the-art data analytic tools and techniques. 2. Apply appropriate Map Reduce Logic for solving computational problems and learn about Hadoop distributed file systems 3. Demonstrate Big data tools like HBase, zookeeper, Hive, Scoop to develop Data centric applications and Express R Programming Language concepts.
21.	20BEOC13	Information Retrieval	1. Illustrate the basic concepts of issues, components of IR and different models in IR. 2. Analyze the web based information in web search engine and crawling techniques. 3. Outline and Evaluate the Hadoop and map reduce and the techniques of Information filtering and Categorization Algorithms.
22.	20BEOC14	Automata and Compiler Design	1. Design or convert an automaton to finite automata for any given problem and interpret the different phases of the compiler design. 2. Solve problems in compilers using lexical analysis, construction of different parsers and intermediate generation of code. 3. Analyze the method for conversion of intermediate code to target code and identify the various types of environment and optimizations for code generation
23.	20BEOC15	Computer Networks	1. Identify the functionality of different OSI layers and protocols in any computer network. 2. Formulate and analyse various error detection,

			correction, channel access, routing algorithms and protocol required for setting up an end-end connection. 3. Engage to design computer networks using various features and operations of different layers for various environments.
24.	20BEOC16	Data Mining	1. Discuss the classical models and algorithms in data warehousing and data mining. 2. Identify different kinds of patterns that can be discovered by association rule mining, classification and clustering as well as detect data. 3. Analyse clusters, classes and outlier detection methods in advanced mining to solve real world problems.
25.	20BEOC17	Computer Networks Practicals	1. Explore the various command line interface networking tools and summarize the working of application layer protocols. 2. Demonstrate the operation of static and dynamic routing protocols and experiment intra and inter VLAN routing concepts. 3. Simulate LAN, test and troubleshoot frame relay, LAN, PAP and CHAP.
26.	20BEOC18	Data Mining and Big Data Analytics Practicals	1. Demonstrate the various data mining algorithms, techniques and applypreprocessing methods for any given raw data. 2. Evaluate systematically supervised and unsupervised models and algorithms with respect to their accuracy. 3. Apply tools and techniques to analyse the concepts in big data analytics.
27.	20BEOC19	High Performance Computing	1. Design, formulate, solve and implement high performance versions of standard single threaded algorithms. 2. Demonstrate the architectural features in the GPU and MIC hardware accelerators. 3. Design programs to extract maximum performance in a multicore, shared memory execution environment processor.
28.	20BEOC20	Distributed Systems and Cloud Computing	1. Illustrate the core concepts of the cloud computing and distributes system paradigm, characteristics, advantages and challenges in the various models and services in cloud computing and distributes system. 2. Apply fundamental concepts in managing power, efficiency, virtualisation and cost, there by leverage and manage single and multiple data centres to build and deploy cloud applications that are resilient, elastic and cost-efficient. 3. Analyze authentication, confidentiality and

			privacy issues in cloud computing and identify security implications in distributed computing.
29.	20BEOC21	Internet and Web Technology	1. Interpret the concepts of the web servers and its working through virtual directories. 2. Acquire in depth knowledge in web services using the latest server side technologies. 3. Design and develop web server applications using Node JS and AngularJS.
30.	20BEOC22	Data Privacy and Security	1. Discuss the risks from the Data Security and Data Privacy perspective. 2. Illustrate the potential for technological development to both threaten and enhance privacy protection. 3. Demonstrate competence in detecting potential security vulnerabilities and demonstrate ways of recovering from the effects of attacks.
31.	20BEOC23	Internet and Web Technology Practicals	1. Learn, apply and Design applications using DHTML and Java Script. 2. Demonstrate the PERL programming language for designing dynamic web pages. 3. Develop web application using MongoDB, Database Connectivity and identify the environments that are currently available on the market to design web sites.
32.	20BEOC24	Cloud Computing Practicals	1. Acquire knowledge on various cloud environment. 2. Create virtual machines and demonstrate different cloud delivery and deployment models. 3. Use and explain cloud file systems with Hadoop technology.
33.	20BEOC26	Object Oriented Analysis and Design	1. Apply OO concepts to design software applications. 2. Explore the UML diagram in designing a software 3. Transform UML based software design into pattern based design using design patterns.
34.	20BEOC27	Agile Technologies	1. Acquire knowledge for taking an Agile approach to software development and analyze SCRUM framework and tools for Agile project management. 2. Apply Testing using Test Driven Development and refactoring to achieve Agility. 3. Analyze the role ofAgile approach in industry.
35.	20BEOE01	Advanced Web Technology	1. Analyse the concept of XML, HTML5. and Internet Technology 2. Create webpages using HTML5. and Advanced CSS. 3. Build dynamic web pages using Client side and server side programming.

36.	20BEOE02	Software Testing	1. Analyse the different approaches used for test case design and test data management. 2. Design the suitable test cases for software testing. 3. Use the automated testing tools to check the behavior of the real time application.
37.	20BEOE03	Adhoc and Sensor Networks	1. Identify the issues and challenges in the design of wireless ad-hoc networks and sensor networks. 2. Discuss various layers in the adhocnetwork and protocols prescribed by IEEE. 3. Utilize and design adhoc and sensor networks for optimum routing, energy, and security for various applications.
38.	20BEOE04	Internet of Things and Application	1. Classify M2M communication methods and protocols needed for IoT Technology. 2. Examine IoT Reference Architecture and make use of appropriate IoT protocols for various applications. 3. Design and Analyze the challenges in developing industrial applications for IoT.
39.	20BEOE05	Natural Language Processing	1. Explain the knowledge of language at the levels of Morphology and Part of Speech Tagging 2. Analyze a sentence to form a syntactic structure and explore the role of semantics of sentences 3. Design an innovative application using NLP components
40.	20BEOE06	Cryptography and Network Security	1. Summarize the computer security concepts and describe the principles underlying cryptographic techniques. 2. Implement the main cryptographic concepts and technologies including symmetricand asymmetric encryption, hashing and digital signatures. 3. Describe the threats and vulnerabilities of malicious software in a network environment and design the security solution.
41.	20BEOE07	Cyber Security and Digital Forensics	1. Examine the systematic procedure for investigation of data found on digital storage media. 2. Identify and document potential security breaches of computer data that suggest violations of legal, ethical, moral, policy, and/or societal standards. 3. Apply a solid foundational grounding in computer networks, operating systems, file systems, hardware, and mobile devices to digital investigations
42.	20BEOE08	Block Chain	1. Prepare the basic cryptographic primitives used in block chain using secure,

			Collision – resistant hash functions, digital signature, public key cryptosystems, zero knowledge proof systems. 2. Discuss the operations of bit coin concepts and Plug-and-play mechanisms for consensus and smart contract evaluation engines. 3. Illustrate block chains with smart contracts and block chain scripting.
43.	20BEOE09	Mobile Technology	1. Explain various architectures, channel access methods, wireless communication generations design considerations and security issues in mobile computing 2. Analyze communication the difference between GSM, GPRS, Bluetooth, RFID, WiMAX, MobileIP,IPv6 and operating systems. 3. Use ANDROID, IOS platform, HTML, CSS3, JavaScript to architectures, features and develop mobile application.
44.	20BEOE10	Virtual Reality	1. Identify fundamental techniques, processes, technologies and equipment used in immersive virtual reality and geometric modelling 2. Analyse the basics of geometric modeling and Virtual environment 3. Outline the functionality of Virtual Hardwares and Softwares and develop Virtual. Reality applications
45.	20BEOE21	Artificial Neural Networks and Deep Learning	1. Describe a Neural Networks using Linear Perceptron and Convolutional Neural Networks using Tensor Flow. 2. Analyse and apply various neurons and memory augmented techniques in deep learning Computers. 3. Acquire knowledge in deep reinforcement learning and implement deep learning algorithms for real time applications.
46.	20BEOE22	Cognitive Computing	1. Describe the architecture of cognitive computing and fuzzy based cognitive system 2. Analyse the use of cognitive computing in machine learning 3. Apply cognitive computing in various domains and analyse the significance of Cloud and Distributed Computing in Cognitive Computing
47.	20BEOE23	Image and Video Processing	1. Compare the basics and fundamentals of digital image processing and video processing techniques such as digitization, sampling, quantization, and 2D-transforms. 2. Analyse the images using the techniques of smoothing, sharpening and enhancement. 3. Discuss the basics of segmentation, features

			extraction, compression and recognition methods for color models and explain 2-D Motion estimation techniques.
48.	20BEOE24	Computer Vision	1. Identify the Basic Concepts, Terminologies, theoretical aspects of computing with images, Image Matting, Composition and Image Matching. 2. Outline and evaluate the concept of match moving, Motion Capture and Kinematics. 3. Analyze the concept of three-Dimensional Data Acquisition and methods of 3D Computer Vision using Various Approaches
49.	20BEOE25	Computational Intelligence	1. Apply the concept of Computational Intelligence in various applications and howit is implemented in simulated Annealing. 2. Acquire the Knowledge genetic algorithm for a given problem in Evolution Computation Theory 3. Implement the concepts of Ant Colony Optimization for a given problem and make use of the concepts of Particle Swarm Optimization to solve problems.
50.	20BEOE26	Human Computer Interaction	1. Acquire knowledge in foundation of HCI and design effective dialog for HCI. 2. Design effective HCI for individuals and persons with disabilities and Assess the importance of user feedback. 3. Outline the HCI implications for designing multimedia/ ecommerce/ e-learning Websites and develop meaningful user interface.
51.	20BEOE27	Industry 4.0	1. Demonstrate the concept of cyber-physical system and explore the concepts of IoT. 2. Analyse the concept of Data Analytics and the Cloud Infrastructure. 3. Explore the concept of Cognitive Computing and the Real Time Application data.
52.	20BEOE28	Social Media Analytics	1. Apply knowledge for current web development in the era of Social Web. 2. Develop a model for integrating data for knowledge representation. 3. Apply the tools and an algorithm for mining in social networks.
53.	20BEOE29	Robotics Technology	1. Analyse the end effectors and robot controls to interact with real time environment. 2. Apply the Robot Transformations, Design and Sensors using MATLAB 3. Demonstrate the Micro/Nano robotic systems.
54.	20BEOE30	Quantum Computing	1. Analyze the concepts of circuit model and

			computation models. 2. Design a framework for quantum mechanics. 3. Estimate the efficiency of quantum modeling and Design quantum algorithms.

M. Phil /Ph. D Electronics and Communication Engineering			
S. No	Course Code	Title of the Course	Course Outcome
1.	19PHELE3A	Advanced Colour Image Processing Techniques	1. Understand concepts of colour image processing. 2. Understand demosaicking algorithms available in the literature. 3. Model image processing algorithms through MATLAB. 4. Code an efficient VLSI Architecture using VERILOG. 5. Test run VLSI codes in FPGA.
2.	19PHELE3B	Wireless Sensor Networks, IoT and Deep Learning	1. Apply WSN protocols for routing application and other practical applications. 2. Analyze the architectures of IoT. 3. Infer the functionality of protocols and optimization techniques of IoT. 4. Apply deep learning concepts for optimization 5. problems.
3.	19PHELE3C	Medical Image Processing	1. Apply image processing concepts for medical images. 2. Use MATLAB for image processing operations 3. Analyze segmentation techniques and implement these in images. 4. Perform quantitative analysis and visualization of medical images of modalities such as PET, MRI, CT and microscopy
4.	19PHELE3D	Wireless Sensor Networks and Communication Techniques	1. Analyze the routing protocols of ad hoc & sensor networks, also outline the importance of security issues in ad hoc and sensor networks. 2. Illustrate the necessity and the design aspects of cooperative and green wireless communication. 3. Compare various methods of providing connection-oriented services over a NGN. 4. Analyze and design a middleware for

			IoT & different models for network dynamics
5.	19PHELE1	ResearchMethodology for Engineers	1. Reproduce the basic concepts of research process 2. Illustrate the data collection and presentation 3. Analyze and interpret data. 4. Explain the algorithmic research. 5. Identify the journal with impact factor and write a research paper.
6.	19PHELE2	Soft Computing and Optimization Techniques	1. Implement machine learning through neural networks. 2. Understand and develop a fuzzy expert system. 3. Model Neuro Fuzzy system for clustering and classification. 4. Analyze the Conventional Optimization Techniques. 5. Able to use the optimization techniques to solve the real-world problems.

Electronics and Communication Techologies			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MEVC01	Graph Theory and Optimization Techniques	1. Explain the basic concepts in graph theory and optimization techniques. 2. Analyze special classes of graphs and apply graph algorithms in VLSI physical design. 3. Apply various optimization techniques and compose their own programming in decision making processes.
2.	20MEVC02	VLSI Subsystem Design	1. Illustrate various VLSI design methodologies and apply layout design rules. 2. Analyze the characteristics of MOS inverter and CMOS circuits. 3. Create the design of combinational and. sequential logic circuits.
3.	20MEVC03	VLSI Design Practicals- I	1. Create and modify combinational and sequential circuits using VHDL and Verilog Hardware Description Language. 2. Illustrate and infer the propagation delay in digital circuits using test bench. 3. Generate digital circuits using FPGA boards.
4.	20MEVC04	Microcontrollers and	1. Install, configure and utilize tool sets for

		Programmable Digital Signal Processors Practicals	developing applications based on ARM Processor, core SoC and DSP processor. 2. Develop prototype codes using commonly available on and off chip peripherals on the Cortex M3 and DSP evaluation boards. 3. Compile programming using Code Composer Studio and C.
5.	20MEVC05.	Research Methodology and IPR	1. Formulate the research problem statement and present it. 2. Explain and apply for IPR for their developed products. 3. Analyze and create new developments in IPR
6.	20MEVC06	Analog VLSI Circuits	1. Explain and analyze most important building blocks of analog ICs, CMOS OP-Amp, trans-conductance amplifier. 2. Discuss the data converter fundamentals, limitations and describe automation and verification techniques of VLSI circuits. 3. Formulate and verify analog signal processing circuits and its layout issues.
7.	20MEVC07	Testing and Testability	1. Illustrate the testable system specifications and create combinational and sequential circuits using test generation algorithms. 2. Propose and apply fault simulation techniques on digital circuits. 3. Use feasibility concepts in special testing problems
8.	20MEVC08	VLSI Design Practicals– II	1. Design and Simulate analog and digital circuits using front end EDA tool. 2. Analyze the timing and power factor of analog circuit design. 3. Generate synthesis report for analog circuits.
9.	20MEVC09	VLSI Design Verification and Testing Practicals	1. Verify increasingly complex designs more efficiently and effectively. 2. Use EDA tools like Cadence, Mentor Graphics. 3. Design ULSI systems
10.	20MEVE11	Computer Aided Design of VLSI Systems	1. Apply fundamental design concepts of VLSI circuits in CAD VLSI. 2. Perform simulation and high-level synthesis and utilize floor planning and routing concepts. 3. Use and illustrate algorithms for placement and partitioning in complicated layouts
11.	20MEVE12	Hardware Description	1. Analyze and propose new small scale combinational logic circuits using HDLs.

		Languages	2. Use Verilog to implement programmable devices. 3. Explain state machines in a hardware description language.
12.	20MEVE13	VLSI Signal Processing	1. Explain the fundamentals of DSP and implement the pipelining and parallel processing in FIR and IIR filters. 2. Describe fast convolution and arithmetic reduction in filters. 3. Compute scaling and round off noise.
13.	20MEVE21	Microcontrollers and Programmable Digital Signal Processors	1. Explain the operations of ARM processor and apply interrupts. 2. Explore the functional blocks of LPC 17xx microcontroller. 3. Identify and propose architecture of programmable DSP processors and develop small applications
14.	20MEVE22	Digital System Design	1. Discuss the fundamentals of combinational and sequential circuits. 2. Explain asynchronous sequential circuits and hazard free circuits. 3. Utilize the programming knowledge in CPLDs and FPGAs.
15.	20MEVE23	Neural Networks for VLSI	1. Explain the basic concepts of neural networks, multilayer architecture and its applications. 2. Utilize the neural network knowledge in VLSI. 3. Create and develop new applications in VLSI using neural networks.
16.	20MEVE31	Image Security	1. Explain the fundamentals of image processing and enhancement techniques. 2. Utilize and apply the color image processing techniques. 3. Use cryptographic, Steganographic techniques and digital watermarking for copy right Protection.
17.	20MEVE32	Design Concepts in VLSI	1. Explain the design concepts of ASIC design and FPGA. 2. Apply and use design flow and verification techniques. 3. Illustrate timing analysis and create new ASIC and FPGA circuits.
18.	20MEVE33	Mixed Signal VLSI Design	1. Analyze analog and digital circuits. 2. Design and solve the engineering problems to increase the data rate of ADC and DAC. 3. Describe the appropriate techniques in the development of data converters

19.	20MEVE41	Low Power VLSI Design	1. Create and low power VLSI circuits with advanced optimization techniques. 2. Propose advanced architectures of RAM. 3. Design low power CMOS VLSI design.
20.	20MEVE42	ASIC Design	1. Familiar with the concepts of ASIC. 2. Utilize the ASIC design software and apply in ASIC designs. 3. Apply testing methods and elaborate the construction and routing of ASIC
21.	20MEVE43	High Speed VLSI	1. Derive and design high speed VLSI circuits. 2. Apply various design strategies for designing a high-speed VLSI circuit. 3. Explain the latching styles, interface techniques and clocking styles.
22.	20MEVE51	VLSI Digital Signal Processing Systems	1. Analyze the concepts of folding and unfolding in DSP systems. 2. Explain and apply digital multipliers architecture and redundant arithmetic concepts. 3. Utilize synchronous and asynchronous pipelining techniques in low power DSP systems.
23.	20MEVE52	Genetic Algorithms and their Applications in VLSI	1. Explain the concepts of genetic algorithms. 2. Apply genetic algorithms for placement and routing of VLSI circuits. 3. Use genetic algorithm in FPGA technology mapping and peak power estimation.
24.	20MEVE53	Computational Aspects of VLSI	1. Explain the concept of design and analysis of algorithms and different models in VLSI. 2. Compile optimization algorithms for VLSI Design. 3. Apply design languages in the implementation of VLSI Design tools.
25.	20MELO01	Waste to Energy	1. Discuss energy conversion devices from waste. 2. Apply and use the methods used for yield and application of biomass pyrolysis. 3. Propose and construct the gasifier engine for power generation, biomass combustors and biogas conversion methods.
26.	20MEMA11	English for Research Paper Writing	1. Write technical documents/ papers in proper format with clarity and readability. 2. Distinguish between quality technical papers as well as articles from average ones. 3. Comprehend, investigate, and develop good Quality research papers.
27.	20MEMA12	Disaster	1. Differentiate between natural and man-

		Management	made disaster. 2. Discuss about the repercussions of disasters and hazards and their impacts on society, economy and human lives. 3. Describe the different monitoring phenomena, evaluation of risk and management and illustrate the concepts of risk assessment and disaster mitigation.
28.	20MEMA13	Research and Publication Ethics	1. Infer the importance of publication ethics, scientific misconduct and honesty. 2. Understand and apply open access publishing concepts. 3. Use available data bases and research metrics for their paper publications.
29.	20MEMA21	Pedagogy Studies	1. Recognize conceptual framework, pedagogical practices to enhance learning process. 2. 2Analyse learning disabilities and Communication a better way with learners of diverse cognitive abilities. 3. Appreciate various pedagogy in teaching and attainment of targeted outcomes.
30.	20MEMA22	Value Education	1. Identify the values and discriminate positive and negative values and practice positive thinking and good moral values. 2. Give focus on character formation, competence and personality development. 3. Develop good habits, discipline and accept the family and professional responsibilities and lead a meaningful life.
31.	20MECS01	Community and Social Service (CSS)	1. To possess the attributes of being morally and intellectually responsive with social awareness and a caring attitude for needy people. 2. To serve the community by applying their professional knowledge and skills. 3. To develop a right attitude of life, good interpersonal and communication skills, and sense of social awareness. 4. To organize various types of commun service activities and awareness programmes
32.	20BELS01	C++ and Data Structures	1. Use appropriate OOPS methodologies to solve real world problem. 2. Design and develop programs employing a variety of linear and non-linear data structures such as stacks, queues, binary trees, search trees, heaps, graphs, and B-trees. 3. Identify and develop suitable code for sorting, searching and hashing technique.

33.	20BELC01	Analog Electronic Circuits - I	1. Identify various parameters that affect the operating characteristics of diodes, BJT, FET and Opto electronic devices. 2. Identify various parameters that effect the operation of Electronic circuits and their performance using BJTs and FETs. 3. Design biasing circuits and implement in the laboratory for obtaining the desired operating point and analyze simple amplifier circuits using BJTs and FETs.
34.	20BELC02	Digital Electronics	1. Use specific reduction methods to simplify and implement digital logic circuits. 2. Design and implement combinational and sequential circuits using various methods and Verilog HDL code. 3. Distinguish between various logic circuits and distinguish between their performances to implement in VLSI circuits.
35.	20BELC03	Signals and Systems	1. Analyze the properties of various signals & systems 2. Apply Laplace transform, Continuous Time &Discrete Time Fourier transform and Z transform for signal analysis 3. Analyze continuous time LTI systems using Fourier and Laplace Transforms, discrete time LTI systems using Z transform and DTFT 4. Outline sampling and reconstruction of continuous-time signals
36.	20BELC04	Networks and Transmission Lines	1. Explain, analyze, and design diverse network configurations, filters, and equalizers. 2. Categorize and demonstrate the transmission of signals through transmission lines and interpret its parameters by using measurement techniques. 3. Apply impedance matching concepts and solve transmission line loss problems using smith chart and other mathematical models.
37.	20BELC05	Electron Devices and Circuits Practicals	1. Design, implement and analyze the performance of various semiconductor devices. 2. Design, simulate and demonstrate different applications of semiconductor devices. 3. Design and analyze the response of amplifier circuits.
38.	20BELC06	Digital Electronics	1. Design and implement combinational and

		Practicals	synchronous sequential circuits using universal gates. 2. Design and demonstrate simple digital systems using various chips. 3. Demonstrate the use of Verilog HDL for simulation of different digital logic circuits.
39.	20BELS02	Control Systems	1. Identify the various control system components and analyse their behaviour under various conditions. 2. Examine the various time domain and frequency domain response plots using different methods and plots. 3. Evaluate the stability criterions using plots, space model and state variables. 4. Design stable control systems for various applications.
40.	20BELC07	Analog Electronic Circuits- II	1. Design and analyze various feedback amplifiers, oscillator circuits, multivibrators and power supplies. 2. Describe and demonstrate the basic construction of op-amps, AC and DC characteristics and its specification. 3. Design, implement and explain the linear as well as non-linear applications, applications for data conversion and of timers of op-amp and analyze its performance.
41.	20BELC08	Electromagnetics and Waveguides	1. Apply various mathematical models to static electric-magnetic fields and interpret their behaviour. 2. Analyze the waves in free space and various mediums using Maxwell's equations. 3. Examine the behaviour of electromagnetic waves in free space and guided medium so as to suggest for various applications.
42.	20BELC09	Microprocessor and Microcontroller	1. Identify the difference between 8086 Microprocessor and 805.1 Microcontroller and explain their operation. 2. List and apply various instruction sets and addressing modes of 8086 Microprocessor and 805.1 Microcontroller for programming and interfacing. 3. Apply the interfacing concepts of memory and I/O devices for simple applications.
43.	20BELC10	Computer Networks	1. Explain the importance of OSI reference model and have a good knowledge about the functionality of all the layers of OSI

			Model. 2. Discuss about the error detection and correction mechanism, routing methods and protocols used invarious layers of OSI model. 3. Analyse the requirements of a given organizational structure and select the most appropriate networking architecture and technology as per the requirements.
44.	20BELC11	Electronic CircuitsPracticals	1. Design and analyze the response of feedback amplifier circuits, oscillators and wave shaping circuits. 2. Design, implement and analyze the performance of linear as well as non-linear applications of op-amp.
45.	20BELC12	Microprocessor and Microcontroller Practicals	1. Write flow chart and compile the basic operations using of 8086 microprocessor and 805.1 microcontrollers with assembly language programming and MASM software. 2. Demonstrate simple applications of 8086 microprocessor. 3. Conceive, design and implement I/O interfaces to 8086 microprocessors for various applications.
46.	20BELC13	Analog and Digital Communication	1. Infer various analog, pulse and digital modulation processes and systems. 2. Analyze the effect of noise in communication system and methods of error correction due to noise. 3. Interpret the need of coding and apply source and channel coding techniques.
47.	20BELC14	Computer Architecture and Organization	1. Identify various parts of a computer and their operation. 2. Discuss arithmetic hardware design, control unit design and memory organisation of computers. 3. Explain concepts of I/O processing and pipelining in computers.
48.	20BELC15.	Antennas and Wave Propagation	1. Discuss various antennas and their properties and predict their performance. 2. Identify and design various special antennas for specific application and measure test its performance. 3. Explain and analyze the propagation characteristics of waves in various mediums.
49.	20BELC16	Digital Signal Processing	1. Appreciate the properties of DFT to apply DFT to digital signals & systems and analyze Quantization effects of Finite

			Register Length in realization of Digital Filters. 2. Design IIR and FIR filters and realize the structures of Linear Digital Filters 3. Compare the properties and addressing modes of various processors and use the DSP Processors for various DSP applications.
50.	20BELC17	Embedded System Design and Architecture	1. Explain the embedded system concepts and architecture of ARM processors. 2. Discuss and apply various Communication bus protocols. 3. Write Embedded C Programming for various Application Development. 4. Demonstrate the concept of real-time programming using tasks in RTOS.
51.	20BELC18	Analog and Digital Communication Practicals	1. Design, implement and evaluate different building blocks of Analog communication and digital communication systems. 2. Analyze the behavior of multiplexers, demultiplexers, modulators, demodulators. 3. Use MATLAB tools to simulate and observe constellations diagrams of digital modulation schemes and their behaviour.
52.	20BELC19	Digital Signal Processing Practicals	1. Perform operations like convolution, FFT, Quantization and apply the same to signal processing. 2. Design digital filters using various DSP processors and implementation the same. 3. Verify and Analyze arithmetic operations and finite word length effect on DSP systems.
53.	20BEHS10	Professional Ethics in Engineering	1. Identify the basic perception of profession, professional ethics, various moral & social issues, industrial standards, code of ethics and role of professional ethics in engineering field. 2. Analyze the professional rights and responsibilities of an engineer, responsibilities of an engineer for safety and risk benefit analysis. 3. Outline the knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.
54.	20BELC20	VLSI Design	1. Explain fabrication, electrical properties and behaviour of MOS Transistors. 2. Design different digital logic circuits and arithmetic building blocks using NMOS

			and CMOS. 3. Identify the essential for low power, basic principles, various power analysis and estimation techniques.
55.	20BELC21	Microwave and Fiber Optics	1. Explain various microwave as well as fiber optic devices their microwave parameters and discriminate diverse microwave components. 2. Recall and calculate parameters of microwave tubes and optical devices. 3. Identify, predict and illustrate the propagation and design microwave and fiber optic links.
56.	20BELC22	Mobile and Millimetre Wave Communication	1. Explore the evolution of mobile radio communication system, wireless channel propagation model and signal processing techniques. 2. Learn 5.G Technology advances and their benefits 3. Learn Device to device communication and millimetre wave communication 4. Illustrate the modulation techniques used in 5.G communication
57.	20BELC23	VLSI Design Practicals	1. Use modern design tools like Xilinx to simulate CMOS inverter and logic gates using MOS Transistor. 2. Design and simulate combinational and sequential logic circuits using MOS transistors. 3. Conceive and design digital sub systems including ALU and memory.
58.	20BELC24	Microwave and Fiber Optics Practicals	1. Identify the electromagnetic field components and verify the specifications of various microwave components. 2. Evaluate the characteristics of antennas and compute the parameters of microwave as well as fiber optic components. 3. Design and evaluate data transmission in optical fiber link by building multiplexed base band.
59.	20MEHS01/ 20BEHS12	Principles of Management and Economics	1. Compile the history of Organizational Behaviour, dynamics of marketing in business and theories of moral development. 2. Analyze and Apply the cost concepts using PERT, CPM and SQC techniques. 3. Apply the principles of Management, Economics and quality control in an organization. 4. Apply project management software tools

			in modern Project Management scenario.
60.	20MEIC01/ 20BELC26	Digital Image Processing and Computer Vision	1. Apply image transforms and different techniques employed for the enhancement of images. 2. Interpret the image enhancement, compression and restoration for various applications. 3. Implement various algorithms for digital image processing and computer vision. 4. Use various coding, segmentation techniques and Morphological Algorithms.
61.	20MEIC02	IoT Architecture and Protocols	1. Explain the concepts of IoT Architecture Reference model and IoT reference architecture. 2. Apply IP based protocols and Authentication Protocols for IoT. 3. Analyse various IoT Application layer Protocols.
62.	20MEIC05.	IoT Technology Practicals-I	1. Develop skills to integrate IOT devices and implement solutions to IoT based problems. 2. Create an IoT based application
63.	20MEIC06	IoT Technology Practicals-II	1. Understand the vision of IoT from a global context, and application of IoT. 2. Use of Devices, Gateways and Data Management in IoT. 3. Building state of the art architecture in IoT.
64.	20MEIC07	Communication Technologies for IoT	1. Explain communication standards, spectrum, Protocol analysis and factors affecting network range in RF and wireless communication system. 2. Identify different cellular, Wi-Fi organization and its standards. 3. Illustrate hardware devices in Wi-Fi, protocols and standards in WPN, WSN.
65.	20MEIC08	Energy Harvesting Technologies and Power Management for IoT Devices	1. Understand the various energy sources harvesting based sensor networks 2. Learn about the various Piezoelectric materials and Non – linear techniques 3. Understand the various Power sources for WSN 4. Learn about the applications of Energy harvesting systems
66.	20MEIC09	Cloud Storage and Computing	1. Explain the core issues of cloud computing such as storage and security. 2. Choose the appropriate technologies, algorithms and approaches for the related issues. 3. Describe cloud security architectures from

			the perspectives of providers
67.	20MEIC10	IoT Technology Practicals – III	1. Create and run virtual machines on open source OS. 2. Implement Infrastructure, Identity management and User management and storage as a service.
68.	20MEIC13	Privacy and Security in IoT	1. To design 'security in' in IOT devices and deployments, and highlight where designs and deployments may have security issues. 2. Explain basic concepts and algorithms of cryptography, including encryption/decryption and hash functions. 3. Understand the authentication credentials and access control 4. Discuss the mechanisms and architectures of various types trust models and cloud security.
69.	20MEIC14	IoT Technology Practicals-IV	1. Demonstrate the working of various Microcontrollers like Node MCU, Arduino and Raspberry Pi. 2. Creating a webpage through Arduino. 3. Demonstrate and build the project successfully by hardware/sensor requirements, coding, emulating and testing.
70.	20BEMC03	Consumer Affairs	1. Understand the concepts of consumer, markets, relevant laws and grievances 2. Familiarize with the consumer protection laws, objectives and concepts 3. Awareness of Grievance Redressal Mechanism under the Indian Consumer Protection Law and Case studies 4. Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment 5. Awareness of contemporary issues in consumer affairs and knowledge of quality and standards
71.	20BELV01	Embedded System for Beginners	1. Specialized in Embedded System Design using Arduino and Raspberry Pi. 2. Think innovatively to implement simple projects using Arduino and Raspberry Pi.
72.	20MEMA11	English for Research Paper Writing	1. Write technical documents/ papers in proper format with clarity and readability. 2. Distinguish between quality technical papers as well as articles from average ones. 3. Comprehend, investigate, and develop good Quality research papers.
73.	20MEMA12	Disaster	1. Differentiate between natural and man-

		Management	made disaster 2. Discuss about the repercussions of disasters and hazards and their impacts on society, economy and human lives 3. Describe the different monitoring phenomena, evaluation of risk and management and illustrate the concepts of risk assessment and disaster mitigation
74.	20MEMA13	Research and Publication Ethics	1. Infer the importance of publication ethics, scientific misconduct and honesty. 2. Understand and apply open access publishing concepts. 3. Use available data bases and research metrics for their paper publications
75.	20MEMA21	Pedagogy Studies	1. Recognize conceptual framework, pedagogical practices to enhance learning process. 2. Analyse learning disabilities and Communicate in a better way with learners of diverse cognitive abilities. 3. Appreciate various pedagogy in teaching and attainment of targeted outcomes
76.	20MEMA22	Value Education	1. Identify the values and discriminate positive and negative values and practice positive thinking and good moral values. 2. Give focus on character formation, competence and personality development. 3. Develop good habits, discipline and accept the family and professional responsibilities and lead a meaningful life.

Electronics and Communication Engineering			
S. No	Course Code	Title of the Course	Course Outcome
1.	20MEVC01	Graph Theory and Optimization Techniques	1. Explain the basic concepts in graph theory and optimization techniques. 2. Analyze special classes of graphs and apply graph algorithms in VLSI physical design. 3. Apply various optimization techniques and compose their own programming in decision making processes.
2.	20MEVC02	VLSI Subsystem Design	1. Illustrate various VLSI design methodologies and apply layout design rules. 2. Analyze the characteristics of MOS inverter and CMOS circuits.

			3. Create the design of combinational and. sequential logic circuits.
3.	20MEVC03	VLSI Design Practicals- I	1. Create and modify combinational and sequential circuits using VHDL and Verilog Hardware Description Language. 2. Illustrate and infer the propagation delay in digital circuits using test bench. 3. Generate digital circuits using FPGA boards.
4.	20MEVC04	Microcontrollers and Programmable Digital Signal Processors Practicals	1. Install, configure and utilize tool sets for developing applications based on ARM Processor, core SoC and DSP processor. 2. Develop prototype codes using commonly available on and off chip peripherals on the Cortex M3 and DSP evaluation boards. 3. Compile programming using Code Composer Studio and C.
5.	20MEVC05	Research Methodology and IPR	1. Formulate the research problem statement and present it. 2. Explain and apply for IPR for their developed products. 3. Analyze and create new developments in IPR
6.	20MEVC06	Analog VLSI Circuits	1. Explain and analyze most important building blocks of analog ICs, CMOS OP-Amp, trans-conductance amplifier. 2. Discuss the data converter fundamentals, limitations and describe automation and verification techniques of VLSI circuits. 3. Formulate and verify analog signal processing circuits and its layout issues.
7.	20MEVC07	Testing and Testability	1. Illustrate the testable system specifications and create combinational and sequential circuits using test generation algorithms. 2. Propose and apply fault simulation techniques on digital circuits. 3. Use feasibility concepts in special testing problems
8.	20MEVC08	VLSI Design Practicals– II	1. Design and Simulate analog and digital circuits using front end EDA tool. 2. Analyze the timing and power factor of analog circuit design. 3. Generate synthesis report for analog circuits.
9.	20MEVC09	VLSI Design Verification and Testing Practicals	1. Verify increasingly complex designs more efficiently and effectively. 2. Use EDA tools like Cadence, Mentor

			Graphics. 3. Design ULSI systems
10.	20MEVE11	Computer Aided Design of VLSI Systems	1. Apply fundamental design concepts of VLSI circuits in CAD VLSI. 2. Perform simulation and high-level synthesis and utilize floor planning and routing concepts. 3. Use and illustrate algorithms for placement and partitioning in complicated layouts
11.	20MEVE12	Hardware Description Languages	1. Analyze and propose new small scale combinational logic circuits using HDLs. 2. Use Verilog to implement programmable devices. 3. Explain state machines in a hardware description language.
12.	20MEVE13	VLSI Signal Processing	1. Explain the fundamentals of DSP and implement the pipelining and parallel processing in FIR and IIR filters. 2. Describe fast convolution and arithmetic reduction in filters. 3. Compute scaling and round off noise.
13.	20MEVE21	Microcontrollers and Programmable Digital Signal Processors	1. Explain the operations of ARM processor and apply interrupts. 2. Explore the functional blocks of LPC 17xx microcontroller. 3. Identify and propose architecture of programmable DSP processors and develop small applications
14.	20MEVE22	Digital System Design	1. Discuss the fundamentals of combinational and sequential circuits. 2. Explain asynchronous sequential circuits and hazard free circuits. 3. Utilize the programming knowledge in CPLDs and FPGAs.
15.	20MEVE23	Neural Networks for VLSI	1. Explain the basic concepts of neural networks, multilayer architecture and its applications. 2. Utilize the neural network knowledge in VLSI. 3. Create and develop new applications in VLSI using neural networks.
16.	20MEVE31	Image Security	1. Explain the fundamentals of image processing and enhancement techniques. 2. Utilize and apply the color image processing techniques. 3. Use cryptographic, Steganographic techniques and digital watermarking for

			copy right Protection.
17.	20MEVE32	Design Concepts in VLSI	1. Explain the design concepts of ASIC design and FPGA. 2. Apply and use design flow and verification techniques. 3. Illustrate timing analysis and create new ASIC and FPGA circuits.
18.	20MEVE33	Mixed Signal VLSI Design	1. Analyze analog and digital circuits. 2. Design and solve the engineering problems to increase the data rate of ADC and DAC. 3. Describe the appropriate techniques in the development of data converters
19.	20MEVE41	Low Power VLSI Design	1. Create and low power VLSI circuits with advanced optimization techniques. 2. Propose advanced architectures of RAM. 3. Design low power CMOS VLSI design.
20.	20MEVE42	ASIC Design	1. Familiar with the concepts of ASIC. 2. Utilize the ASIC design software and apply in ASIC designs. 3. Apply testing methods and elaborate the construction and routing of ASIC
21.	20MEVE43	High Speed VLSI	1. Derive and design high speed VLSI circuits. 2. Apply various design strategies for designing a high-speed VLSI circuit. 3. Explain the latching styles, interface techniques and clocking styles.
22.	20MEVE51	VLSI Digital Signal Processing Systems	1. Analyze the concepts of folding and unfolding in DSP systems. 2. Explain and apply digital multipliers architecture and redundant arithmetic concepts. 3. Utilize synchronous and asynchronous pipelining techniques in low power DSP systems.
23.	20MEVE52	Genetic Algorithms and their Applications in VLSI	1. Explain the concepts of genetic algorithms. 2. Apply genetic algorithms for placement and routing of VLSI circuits. 3. Use genetic algorithm in FPGA technology mapping and peak power estimation.
24.	20MEVE5.3	Computational Aspects of VLSI	1. Explain the concept of design and analysis of algorithms and different models in VLSI. 2. Compile optimization algorithms for VLSI Design.

			3. Apply design languages in the implementation of VLSI Design tools.
25.	20MELO01	Waste to Energy	1. Discuss energy conversion devices from waste. 2. Apply and use the methods used for yield and application of biomass pyrolysis. 3. Propose and construct the gasifier engine for power generation, biomass combustors and biogas conversion methods.
26.	20MEMA11	English for Research Paper Writing	1. Write technical documents/ papers in proper format with clarity and readability. 2. Distinguish between quality technical papers as well as articles from average ones. 3. Comprehend, investigate, and develop good Quality research papers.
27.	20MEMA12	Disaster Management	1. Differentiate between natural and man-made disaster. 2. Discuss about the repercussions of disasters and hazards and their impacts on society, economy and human lives. 3. Describe the different monitoring phenomena, evaluation of risk and management and illustrate the concepts of risk assessment and disaster mitigation.
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63.	20MEIC06	IoT Technology Practicals-II	1. Understand the vision of IoT from a global context, and application of IoT. 2. Use of Devices, Gateways and Data Management in IoT. 3. Building state of the art architecture in IoT.
64.	20MEIC07	Communication Technologies for IoT	1. Explain communication standards, spectrum, Protocol analysis and factors affecting network range in RF and wireless communication system. 2. Identify different cellular, Wi-Fi organization and its standards. 3. Illustrate hardware devices in Wi-Fi, protocols and standards in WPN, WSN.
65.	20MEIC08	Energy Harvesting Technologies and Power Management for IoT Devices	1. Understand the various energy sources harvesting based sensor networks 2. Learn about the various Piezoelectric materials and Non – linear techniques 3. Understand the various Power sources for WSN 4. Learn about the applications of Energy harvesting systems
66.	20MEIC09	Cloud Storage and Computing	1. Explain the core issues of cloud computing such as storage and security. 2. Choose the appropriate technologies, algorithms and approaches for the related issues. 3. Describe cloud security architectures from the perspectives of providers
67.	20MEIC10	IoT Technology Practicals – III	1. Create and run virtual machines on open source OS. 2. Implement Infrastructure, Identity management and User management andstorageas a service.
68.	20MEIC13	Privacy and Security in IoT	1. To design ‘security in’ in IOT devices and deployments, and highlight where designs and deployments may have security issues.

			2. Explain basic concepts and algorithms of cryptography, including encryption/decryption and hash functions. 3. Understand the authentication credentials and access control 4. Discuss the mechanisms and architectures of various types trust models and cloud security.
69.	20MEIC14	IoT Technology Practicals-IV	1. Demonstrate the working of various Microcontrollers like Node MCU, Arduino and Raspberry Pi. 2. Creating a webpage through Arduino. 3. Demonstrate and build the project successfully by hardware/sensor requirements, coding, emulating and testing.
70.	20BEMC03	Consumer Affairs	1. Understand the concepts of consumer, markets, relevant laws and grievances 2. Familiarize with the consumer protection laws, objectives and concepts 3. Awareness of Grievance Redressal Mechanism under the Indian Consumer Protection Law and Case studies 4. Comprehend the business firms' interface with consumers and the consumer related regulatory and business environment 5. Awareness of contemporary issues in consumer affairs and knowledge of quality and standards
71.	20BELV01	Embedded System for Beginners	1. Specialized in Embedded System Design using Arduino and Raspberry Pi. 2. Think innovatively to implement simple projects using Arduino and Raspberry Pi.
72.	20MEMA11	English for Research Paper Writing	1. Write technical documents/ papers in proper format with clarity and readability. 2. Distinguish between quality technical papers as well as articles from average ones. 3. Comprehend, investigate, and develop good Quality research papers.
73.	20MEMA12	Disaster Management	1. Differentiate between natural and man-made disaster 2. Discuss about the repercussions of disasters and hazards and their impacts on society, economy and human lives 3. Describe the different monitoring

			phenomena, evaluation of risk and management and illustrate the concepts of risk assessment and disaster mitigation
74.	20MEMA13	Research and Publication Ethics	1. Infer the importance of publication ethics, scientific misconduct and honesty. 2. Understand and apply open access publishing concepts. 3. Use available data bases and research metrics for their paper publications
75.	20MEMA21	Pedagogy Studies	1. Recognize conceptual framework, pedagogical practices to enhance learning process. 2. Analyse learning disabilities and Communicate in a better way with learners of diverse cognitive abilities. 3. Appreciate various pedagogy in teaching and attainment of targeted outcomes
76.	20MEMA22	Value Education	1. Identify the values and discriminate positive and negative values and practice positive thinking and good moral values. 2. Give focus on character formation, competence and personality development. 3. Develop good habits, discipline and accept the family and professional responsibilities and lead a meaningful life.

B. E FPPT			
S. No	Course Code	Title of the Course	Course Outcome
1.	18BEFS01	Crop Process Engineering	1. Develop Fourier series for functions 2. Solve problems using Fourier Transforms 3. Solve problems using Z Transforms 4. Solve partial differential equations using various methods 5. Apply partial differential equations in the real world problems
2.	18BEFS02	Thermal Processing of Foods	1. To employ the process parameter for thermal processing based on microorganism 2. To state the process recommendation for thermally processed food 3. To identify thermal processing of different food based on processing system 4. To identify packaging material based on food and thermal treatment 5. To analysis the self-life of thermally process

			food
3.	18BEFC01	Introduction to Food Science	1. To understand the outlines of cereal and pulse processing technology. 2. To appreciate the importance of nutrients in milk, fruits and vegetables. 3. To comprehend the nutritive value of fleshy foods. 4. To recognize the composition of sugar, spices, nuts and oilseeds. 5. To identify different cooking methods and common adulterants in foods
4.	18BEFC02	Unit Operations in Food Processing	1. To understand the various evaporation system used in food industry. 2. To understand the mechanical separation process carried out in food industries 3. To impart the Contact equilibrium separation processes related to food industry 4. To Demonstrate the size reduction operation carried out in food industries 5. To impart the crystallization process in food industries
5.	18BEFC03	Food Microbiology	1. To develop the knowledge in the basic area of Food Microbiology 2. To understand the growth and methods of isolation of microorganisms from food. 3. To name and describe the beneficial and spoilage microorganisms associated with food 4. To enumerate the spoilage factors and the conventional methods of preservation, Fermentation process and fermented food products. 5. To predict the causative agent and pathogenesis of disease causing food-borne pathogens and their toxin.
6.	18BEFC04	Food Microbiology and Quality Control Practicals	1. Gain a good understanding of laboratory practices in food microbiology 2. Become qualified for working in a food microbiology laboratory in industry. 3. To enumerate the microorganisms to check the quality characteristics of food. 4. Identify the microorganisms using staining techniques. 5. To gain hands on experience on qualitative and quantitative techniques of food analysis
7.	18BEFC05	Unit Operations in Food Processing Practicals	1. To learn the operation and utilization of equipment involved in food processing. 2. To choose suitable techniques for the food processing operation. 3. To describe and demonstrate the various

			process equipment. 4. To evaluate the different operations in food processing.
8.	18BESM10	Biostatistics	1. Understand the basic concepts of probability 2. Gain knowledge in testing of hypothesis for large samples applied to real world problems 3. Gain knowledge in testing of hypothesis for small samples applied to real world problems 4. To test the goodness of fit and independence of attributes using chi square test. 5. Acquire skills in linear correlation and regression
9.	18BEFC06	Fat and Oil Processing Technology	1. Learn the physical and chemical properties of fats and oils 2. Identify and apprehend the various oil extraction techniques. 3. Gain knowledge on the refining of fats and oils 4. Study the different packaging techniques of fats and oils
10.	18BEFC07	Refrigeration and Cold Chain	1. Apply and analyse the mechanisms of heat transfer by Conduction under steady, Unsteady and transient conditions in Food Processing 2. Perform thermal analysis of Convection heat transfer 3. Perform thermal analysis of Radiation heat transfer 4. Design heat exchangers used in Food Processing 5. Describe the process of mass transfer and its application in Food Processing
11.	18BEFC08	Measurements and Instrumentation in Foods	1. Ability to understand the general classification of measuring instruments in food industries 2. Provide the fundamentals of temperature measuring instrument in the industries 3. Gain knowledge of pH measuring instruments and their applications in food processing 4. Apply the functions of spectroscopy and its application in food processing 5. Apply the knowledge of calorimetry and its application in food processing
12.	18BEFC09	Dairy Engineering	1. Able to develop new innovative dairy based products. 2. Able to demonstrate the processing equipments or machineries involved in dairy

			processing. 3. To understand the processing of milk 4. To explain the unit operations involved in the processing various dairy based products 5. To impart the packaging and dairy operation system in the industry
13.	18BEFC10	Dairy Practicals	1. The students will able to test the quality of the milk and dairy based products. 2. Able to process few dairy based products.
14.	18BEFC11	Measurements and Instrumentation in Foods Practicals	1. To learn the operation and utilization of equipment involved in various measurements of food samples. 2. To choose suitable techniques for the food processing operation. 3. To evaluate the working of different equipment involved in various measurements of food samples.
15.	18BEFC12	Design and Layout of Food Machine Elements	1. Review the projection of sectional views 2. Construct the assembled views for given part details 3. Understand the terms and nomenclature of Threaded Fasteners and Machine Elements 4. Analysis the fit and tolerance for various mating parts for food plant 5. Distinguish the parts details for given assembled views
16.	18BEHS09	Process Economics and Industrial Management in Food Processing	1. Identify the principles of Production Management to perform as efficient Food Technology managers. 2. Illustrate the outlines of Engineering Economics for Food Process Engineers. 3. Appraise Cost and Pricing techniques for food products. 4. Interpret the evolution of Management and Principles. 5. Apply marketing management concepts to develop marketing strategies for food products
17.	18BEFC13	Cereals and Pulses Technology	1. Students can learn the material and energy balance related to the unit operations 2. Students can understand the factors affecting unit operations 3. Students can select suitable unit operations for a specific purpose 4. To analyse the performance evaluation of different unit operations in food industries
18.	18BEFC14	Technology of Plantation Crops and Spices	1. Define the different unit operations and its equipment's involved in coffee processing. 2. Understand the processing of tea processing. 3. Gain knowledge in processing of spices and

			also its value added products. 4. Study the varieties of processing of spices along with their chemical constituents. 5. Demonstrate appropriate technique for the packaging, fumigation, adulteration of spices
19.	18BEFC15	Engineering Properties of Foods	1. Design the material handling and storage equipment 2. Employ the measurement techniques of engineering properties of food 3. Assess liquid and solid food properties using measurement device 4. Identify food properties and quality of thermal and non-thermal processed food 5. Comprehend the dielectric properties of foods.
20.	18BEFC16	Heat and Mass Transfer	1. Apply and analyse the mechanisms of heat transfer by Conduction under steady, Unsteady and transient conditions in Food Processing. 2. Perform thermal analysis of Convection heat transfer 3. Perform thermal analysis of Radiation heat transfer 4. Design heat exchangers used in Food Processing 5. Describe the process of mass transfer and its application in Food Processing.
21.	18BEFC17	Cereals and Pulses Technology Practicals	1. Students can learn the material and energy balance related to the unit operations 2. Students can understand the factors affecting unit operations 3. Students can select suitable unit operations for a specific purpose 4. To analyze the performance evaluation of different unit operations in food industries
22.	18BEFC18	Food Process Engineering Practicals	1. The students have gained knowledge of engineering properties of food materials. 2. The students have gained skills measurement techniques of engineering properties of foods. 3. The students have acquired technical know-how on the design of processing, transport and storage structures 4. Students able to design machineries based upon engineering properties. 5. Students able to develop new products based upon engineering properties.
23.	18BEFC19	Fruit and Vegetable Process Engineering	1. Demonstrate the various processing techniques involved in the processing of

			fruits and vegetables. 2. Apply knowledge in selection of packaging types for fruits and vegetables and its products. 3. Develop new innovative products from fruits and vegetables
24.	18BEFC20	Bakery and Confectionery Technology	1. Recognize the significance of ingredients for baking. 2. Evaluate suitable processing equipment for bakery products. 3. Familiarize with the commercial methods of baking bread and recent advances in bakery industry. 4. Infer the process and production technologies for different bakery products. 5. Comprehend the processing methods and quality control for confectionery products
25.	18BEFC21	Fruit and Vegetable Process Engineering Practicals	1. Identify Drying system suitable for different fruits and vegetables 2. Experiment novel Thermal processing techniques 3. Demonstrate value added product produced from fruits and vegetable **4.** To evaluate the performances of the equipment involved in fruit and vegetable unit operations
26.	18BEFC22	Bakery and Confectionery Technology Practicals	1. Analyze the properties of ingredients for baking. 2. Acquaint with the preparation of various bakery products 3. Perform quality analysis for baked products. 4. Infer the preparation process for different confectionery products 5. Comprehend the lay out for bakery industry
27.	18BEFC23	Food Packaging	1. Understand the basic concepts of food packaging 2. Comprehend on protective packaging of foods 3. Study about the packaging materials used for the different food materials 4. Through knowledge on canning operations 5. Comprehend the packaging standards and regulations.
28.	18BEFC25	Food Safety	1. Illustrate knowledge of hazards in food industry 2. Practices and awareness on regulatory and statutory bodies in india and the world 3. Thorough Knowledge of food hazards, physical, chemical and biological in the industry and food service establishments

			4. Implement HACCP in food industry 5. Awareness on regulatory and statutory bodies in India and the world
29.	18BEFE01	Food Nanotechnology	1. Be aware of the basic concepts of nanotechnology. 2. Be able to understand the different Characterization Techniques. 3. Apply key concepts of Micro and Nano encapsulation Techniques and Nano coating. 4. Understand about Filtration by membrane systems. 5. Comprehend the Nanotechnology Applications in Food Industry
30.	18BEFE02	Extrusion Technology	1. To apprehend the importance of extrusion process in the industries 2. To demonstrate the raw materials used in the extrusion process and their functions 3. To study the types of extruders used in the food industry 4. To analyze about the instrumentation & process monitoring in the extrusion process 5. To recognize about the different extruded snack products and their benefits
31.	18BEFE03	Emerging Trends in Food Technology	1. Understand the basic hurdle technology, mechanism and its action in foods. 2. Appreciate the trends in osmotic dehydration of Foods. 3. Apply the principles of ohmic heating in processed foods. 4. Comprehend about ultrasound Processing of Foods. 5. To understand the concepts of freeze drying.
32.	18BEFE04	Sugar Process Engineering	1. Employ hurdle technology in food preservation 2. Design of osmotic dehydration equipment based on types of food 3. Develop novel thermal and non-thermal treatment technique 4. Illustrate the shelf life and nutritional factor of treated food
33.	18BEFE05	Fish Processing Technology	1. Process handling of fish 2. Preservation, transport and storage
34.	18BEFE06	Rheology and Texture Analysis of foods	1. Students will understand the importance of rheology in food industry. 2. Gain knowledge on mechanical and sensory characteristics of foods. 3. Understand the significance of food texture 4. Gain knowledge on instrumental measurement on rheology 5. Understand significance of emulsifiers in

			foods
35.	18BEFE07	Meat and Poultry Processing	1. Understanding of processing and preservation techniques of meat, poultry and egg. 2. Be able to understand the specific processing technologies used for meat and meat products 3. To Understand the application of scientific principles of meat processing technologies 4. Exposure to Safety issues, Regulation and Quality assurance in processed animal products.
36.	18BEFE08	Functional Foods and Nutraceuticals	1. Understand about functional foods and its properties 2. Understand regarding Metabolic disorders and its relation with functional foods 3. Learn the benefits of fortification in Food supplements 4. Utilize food waste for nutrition enrichment 5. Understand the importance of Prebiotic and probiotic foods
37.	18BEFE09	Food Flavors	1. Understand basics food flavors and colours 2. To understand flavor compound used in food industry 3. To develop chemical sensors and receptors 4. To develop methods for stabilization of natural colorant
38.	18BEFE10	Food Process Enterprise	1. Understand management and trading aspects in food process industry. 2. Appreciate the key elements of project appraisal. 3. Apply marketing and economic principles to decision making in agribusiness firms 4. Enable to identify the latest trends in food product marketing. 5. Explain the marketing channels and supply chain management.
39.	18BEFE11	Fermentation Technology for Foods	1. Facilitate students to learn the concepts of fermentation in food processing. 2. Learn about the industrially important Microorganism. 3. Understand the design of fermenter. 4. Gain knowledge of media preparation 5. Understand the different type of fermented foods
40.	18BEFE12	Milling Technology for Food Materials	1. Understand the by-products obtained from milling and its wastes. 2. Recognize the significance of quality parameters in selection, product development and value addition.

41.	18BEFE13	Cryogenic Preservation and Freeze drying of foods	1. Gain knowledge on the cryogenic properties and cryo cycles. 2. Explain the functions and applications of Cryocoolers 3. Ability to select materials for cryogenic treatment 4. Elaborate the instrumentation and Design of Cryogenics 5. Understand the application after cryogenic treatment
42.	18BEFE14	Introduction To Food Processing	1. To define the various unit operations in food processing. 2. To compute the moisture content of food materials. 3. To describe and demonstrate the various process equipments 4. To evaluate the different operations in food processing. 5. To estimate the energy requirement for the different unit operations. 6. To develop unit operation system for food processing.
43.	18BEFE15.	Food Preservation Technology	1. Understanding Changes occurring during various food processing techniques 2. Changes during storage and preservation o Effect of enzymes on spoilage reactions of foods **3.** To understand the role of different methods of preservation on different foods and their impact on the shelf life, quality, and other physical and sensory characteristics of foods. **4.** To familiarize with the recent methods of minimal processing of foods **5.** To understand the materials and types of packaging for foods
44.	18BEFE16	Principles of Nutrition	1. Understand the vital link between nutrition and health 2. Gain knowledge on functions, metabolism and effects of deficiency of nutrients 3. Understand the role of different methods of preservation on different foods and their impact on the shelf life, quality, and other physical and sensory characteristics of foods. **4.** Familiarize with the recent methods of minimal processing of foods **5.** Understand the materials and types of packaging for foods
45.	18BEFE21	Sensors for Food	1. To provide basic understanding of the types

		Technology	of sensors used in food technology applications 2. To understand the fundamentals of sensing for the food industry including process control. 3. To know the use of different types of sensor systems in the food industries. 4. To learn about the commercially available sensors used in food industries. 5. To keep updated on the E-sensors used in various applications in food industries
46.	18BEFE22	Sensory evaluation of foods	1. To understand Principles of sensory analysis of foods. 2. Enable to identify various factors influencing analysis of sensory attributes. 3. Able to understand taste and olfaction perception. 4. To recognise dimensions of colour and texture of foods
47.	18BEFE23	Food Industry Waste Management	1. Understand the characterization and chemical properties of food waste 2. Handle industrial waste with necessary precautions to avoid infection and cross contamination 3. To enable the student to understand the methods of treatment 4. Monitor the sludge and effluents discharged from food industries meet the limitation by law 5. Control environmental pollution by proper treatment of food waste
48.	18BEFE24	Snack Food Technology	1. To understand the wide diversity and common features of snack foods. 2. To gain knowledge of the different techniques of snack foods manufacture. 3. To identify the various types of packages used for snack foods. 4. To understand the unique features of traditional Indian snack foods. 5. To know about the equipment used for preparation of snack foods
49.	18BEFE25.	Processing of Millets	1. To understand the principles involved in millet processing. 2. 2 To understand working and application of various processing equipment for millets
50.	18BEFE26	Production Technology of Fruits	1. Understanding the importance and horticultural classification of fruit crops 2. Understanding the c Sub-tropical and humid zone fruit crops 3. Understanding the production technology of

			tropical fruit crops, Arid and Temperature fruit crops
51.	18BEFE27	Production Technology of Vegetables	1. Understanding the importance and horticultural classification of Vegetable crops 2. Understanding the c Sub-tropical and humid zone Vegetable crops 3. Understanding the production technology of tropical Vegetable crops
52.	18BEFE28	Drying Technology of Foods	1. To gain knowledge on drying principles and psychrometric chart 2. To apply the principles to solve problem on drying 3. To understand different types of dryers for different food materials 4. To design dryers for different types of foods 5. To assess the concept behind industrial dryers 6. To evaluate the dryer performance
53.	18BEFE29	Beverage Technology	1. To understand the principles of beverage processing. 2. To understand the role of different methods used to process the beverages
54.	18BEFE30	Genetically Modified Foods	1. To understand principles of genetically modified foods 2. Enable to identify various factors affecting plant pharmaceuticals 3. Better understandings of concepts involved in transgenic foods and
55.	18BEFE31	Grain storage Technology	1. To recognize the need for adaptation of scientific storage methodologies for food commodities. 2. To distinguish between traditional storage structures and modern storage structures. 3. To design and construct modified storage structure based on the requirement on the farm. 4. To calculate the amount of 2& O2 that can be permissible in systems that require a manipulation of the storage structures in terms of atmospheric conditions. 5. To criticize, evaluate and judge the efficiency of commercial storage structures. 6. To modify structures and environments to better fit the needs of commodities and consumer alike.
56.	18BEFE32	Food additives and Ingredients	1. To understand the principles of chemical preservation of foods 2. To understand the role of different food additives in the processing of different foods

			and their specific functions in improving the shelf life, quality, texture and other physical and sensory characteristics of foods.
57.	18BEFE33	Thermodynamics in Food Processing	1. Apply the Law's of Thermodynamic based on the Properties of Fluids 2. Explain the law of perfect gases and expansion of gases in thermodynamic processes 3. Analyse the Steady Flow Energy Equation and determine the efficiency of Air Cycles 4. Elaborate the fundamentals of fluid flow and energy equation 5. Explain the construction and performance of steams boilers and pumps

M. E FPPT			
S. No	Course Code	Title of the Course	Course Outcome
1.	19MEFC01	Operations Research	1. Formulate and solve linear programming problems, transportation and assignment problems using various optimization techniques 2. Expose to sequencing problems 3. Solve inventory problems in decision making 4. Solve replacement problems 5. Apply simulation technique to real world problems
2.	19MEFC02	Unit Operations in Food Process Engineering	1. Define the various unit operations in food processing. 2. Compute the moisture content of food materials. 3. Describe and demonstrate the various process equipments 4. Evaluate the different operations in food processing. 5. Estimate the energy requirement for the different unit operations.
3.	19MEFC03	Food Engineering Practicals	1. Apply the processing technique in the manufacturing of various food products. 2. Demonstrate the various machineries or equipment’s involved in the processing of food products.
4.	19MEFC04	Food Packaging Practicals	1. Demonstrate and explain food packaging techniques used to determine the strength of food materials. 2. Apply Knowledge in the Development of new packaging with proper quality parameter.

5.	19MEFC05.	Research Methodology and IPR	1. Understand research problem formulation 2. Understand about literature studies 3. Analyse research related information and follow research ethics. 4. Emphasise the need of information about technical writing and research 5. Understand about Patent Rights.
6.	19MEFE11	Drying Technology	1. Demonstrate on drying principles and psychometric chart. 2. Apply knowledge principles to solve problem on drying 3. Understand about different types of dryers for different food materials. 4. Emphasise on design dryers for different types of foods. 5. Understand about radiation and dielectric dryers
7.	19MEFE12	Food Preservation Technology	1. Understand the changes occurring during various food processing techniques 2. Analyse the changes during storage and preservation o Effect of enzymes on spoilage reactions of foods 3. To understand the role of different methods of preservation on different foods and their impact on the shelf life, quality, and other physical and sensory characteristics of foods. 4. To familiarize with the recent methods of minimal processing of foods 5. To understand the materials and types of packaging for foods
8.	19MEFE13	Storage Engineering	1. Recognize the need for adaptation of scientific storage methodologies for food commodities. 2. Distinguish between traditional storage structures and modern storage structures. 3. Design and construct modified storage structure based on the requirement on the farm. 4. Calculate the amount of 2& O_2 that can be permissible in storage structures and systems. 5. Evaluate the efficiency of commercial storage structures.
9.	19MEFE21	Advances in Food Packaging	1. Apply and examine the knowledge of properties for selection of packaging materials for foods& food products. 2. Select between different techniques of food packaging. 3. Relate the properties of food packages to processing and packaging technologies. 4. Describe the technology involved in different packaging materials.

			5. Evaluate the efficiency of new and emerging technologies in food packaging.
10.	19MEFE22	Non Thermal Processing Techniques in Foods	1. To know the emerging technologies applied to food processing 2. To understand the relative advantages and disadvantages of emerging technologies over existing technologies 3. To visualize the equipment used and process stages of emerging technologies 4. To apply the non-thermal technologies as alternative food processing methods 5. To identify the potential of newer technologies for commercialization & develop strategies for applying the technologies to wide range of food
11.	19MEFE23	Engineering Properties of Foods	1. Design the material handling and storage equipment's. 2. Employ the measurement techniques of engineering properties of food 3. Assess liquid and solid food properties using measurement device 4. Identify food properties and quality of thermal and non-thermal processed food 5. Comprehend the dielectric properties of foods.
12.	19MEFC06	Fruits and Vegetable processing engineering	1. Demonstrate the various processing techniques involved in the processing of fruits and vegetables. 2. Apply knowledge in selection of packaging types for fruits and vegetables and its products 3. Develop new innovative products from fruits and vegetables. 4. Emphasise on the recent techniques in processing of fruits and vegetables. 5. Understand about quality attributes of fresh fruits and vegetables.
13.	19MEFC07	Cereal, Pulse and Oilseeds Processing Technology	1. Demonstrate the various processing techniques involved in the processing of Cereals ,Pulses and Oil seeds 2. Apply knowledge in rice processing and its products 3. Understand about wheat processing and its products. 4. Emphasise on the recent techniques in processing of pulses. 5. Understand about Importance and trends of oil seed processing
14.	19MEFC08	Food Processing and Preservation Practicals	1. Able to determine the quantitative parameters involved in food preservation. 2. Apply knowledge in the development new

			packaging materials to give better shelf life.
15.	19MEFC09	Food Analysis Practicals	1. Demonstrate and explain various analytica techniques used to determine the quality of foo materials. 2. Apply knowledge in the development of new products with proper quality Parameters
16.	19MEFE31	Milk and Milk Products Technology	1. To understand the various physiochemical properties involved in dairy processing 2. To gain knowledge of the various equipments employed in the dairy processing industry 3. To explain the unit operations involved in th processing various dairy based products 4. To understand effluent treatment in dairy industry 5. To identify the dairy based products and its processing methods in detail
17.	19MEFE32	Flavour, spices and plantation products	1. To understand the flavor profiling, analytical and processing techniques, quality aspects of flavor, spices and plantation products. 2. To acquire knowledge about stability studies on storage, processing, transportation 3. To Apply preventive measures and control methods to minimize the hazards. 4. Able to gain knowledge in different processing of plantation crops, spices. 5. To learn about the quality and functional value of spices. 6. To gain the knowledge about spice processing.
18.	19MEFE33	Modern Baking and Confectionery Technology	1. Adapt the standards and regulations followed in bakery and confectionary industry. 2. Grasp basic knowledge about food ingredients and its used in bakery products 3. Utilise bakery unit processing machinery effectively. 4. Handle confectionary products and check quality in process line 5. Adapt various process flow line in confectionary and bakery products
19.	19MEFE41	Instrumental Techniques in Food Analysis	1. To identify reasons for determining composition and characteristics of food. 2. To give basic knowledge on instrumental methods of chemical analysis. 3. To understand the principles behind analytical techniques associated with food. 4. To know methods of selecting appropriate analytical techniques when presented with a practical problem.

			5. To provide an understanding of and skills in advanced methods of separation and analysis
20.	19MEFE42	Advances in Food Chemistry and Technology	1. Understand and be able to learn the major chemical and biochemical reactions that influence food quality with emphasis on food industry applications. 2. Understand how the properties of different food components and interactions modulate the specific quality attributes of food systems. 3. Develop an understanding of the principles whereby food molecules can be selected for use as ingredients in food formulations 4. Understand the principles that underlie the biochemical changes in the macronutrients of foods. 5. Demonstrate depth and breadth of knowledge in food chemistry as they apply to food systems
21.	19MEFE43	Sensors for Food Technology	1. Understand about biosensors in food engineering. 2. Understand the fundamentals of sensing for the food industry including process control. 3. Know how to use the different types of sensor systems in the food industries 4. Gain knowledge on commercial devices based on biosensors 5. Acquaint with new biosensors in food processing application.
22.	19MEFE51	Food Safety and Quality Management	1. To know the principles of Food Safety & Quality 2. To Apply preventive measures and control methods to minimize the hazards 3. To know the requirements of Regulatory bodies of safe food. 4. To learn the principles of HACCP and to develop procedures and approaches to identify food safety hazards in food processing 5. To gain the knowledge about the Food labelling and sanitation of food industries.
23.	19MEFE52	Food Process Design andLayout	1. Design and setting up of new food processing plant as Entrepreneur and/or consultant 2. The importance HACCP and food safety laws governing food industries 3. Implement the food safety standards in food industry. 4. Prepare cost estimate and economic analysis of food industry 5. Help to minimize the food industry losses and maximize the processed food production

24.	19MEFE53	Advances in Meat, Fish and Poultry Technology	1. To familiarize with the advanced treatment of the concepts involved in the production, processing an acceptance of meat, poultry and fish. 2. To provide an understanding of the Poultry meat processing industry 3. To familiarize with the by-products derived from meat, poultry and fish. 4. To gain knowledge on the marine processing and preservation techniques 5. To learn about meat inspection, sanitation and preservation techniques
25.	19MEFO01	Industrial safety and GMP in Food Industries	1. Gain knowledge on the causes and prevention of accident 2. Understand the functions and types of maintenance 3. Illustrate the factors and prevention of Wear and Corrosion 4. Understand the concept of fault tracing. 5. Apply preventive maintenance and Good manufacturing practices

B.Voc. Food Processing and Engineering			
S. No	Course Code	Title of the Course	Course Outcome
1.	20VLEN01	Communicative English	1. Listen actively and comprehend the meaning 2. Make presentation individually or in groups 3. Use appropriate words in conversation 4. Gain knowledge in writing skills 5. Develop effective communicative skills
2.	20VFPC01	Introduction to Food Science and Technology	1. Classify the foods into groups and describe the composition of foods 2. Identify the basic food processing techniques 3. Interpret the changes in foods during cooking and storage
3.	20VFPC02	Fruit and Vegetable Processing Technology	1. Recall the post-harvest handling of fruits and vegetables and select appropriate preservation techniques 2. Apply suitable techniques to increase the shelf life of fruits and vegetables 3. Develop new fruit and vegetable products
4.	20VFPC03	Bakery and Confectionery Technology	1. Outline the role of ingredients in baking and explain the different methods in mixing ingredients 2. Demonstrate the techniques in product preparation 3. Analyse the quality of finished products

5.	20VFPS01	Skill Training in Industry	1. Relate the theory with practical applications and construct skills related to job roles in industry 2. Compare the industrial preparation of products with laboratory preparations 3. Organise equipment for product preparation
6.	20VLEN02	Professional English	1. Use English skills with reasonable competence 2. Know the time management and goal setting in writing 3. Widen professional work habits with effective collaboration 4. Make wider public speaking skills **5.** Develop creative and innovative skills through letters, posters and invitation designs.
7.	20VFPC04	Microbiology in Food Processing and Preservation	1. Classify the hierarchy of microorganisms and knowledge on microbial spoilage 2. Explain the relationship between microbes and food industry 3. Execute subject knowledge in the work place.
8.	20VFPC05.	Entrepreneurship in Food Processing	1. Describe entrepreneurial qualities and types of entrepreneurship 2. Identify business opportunities and develop marketing strategies 3. Illustrate the food processing plant design and prepare business proposal
9.	20VFPC06	Food Standards and Labelling	1. Define food laws and standards, food labeling 2. Apply the food standards in industry 3. Adopt good manufacturing practice in industry
10.	20VFPC07	Food Analysis Practical	1. Choose appropriate techniques for quality assessment 2. Demonstrate the quality assessment techniques for different food groups 3. Interpret the food quality assessment experiments, detect adulterants in food items
11.	20VFPS02	Skill Training in Industry	1. Relate the theory with commercial preparation of products and organize resources for product preparation 2. Define the responsibilities in industrial production, 3. Exhibit cleanliness and hygienic practices in industry
12.	20VFPC08	Unit Operations in Food Processing	1. Classify the fundamental units and operations.

			2. Assess the operative mode of instruments and their purpose. 3. Design instruments and equipment and explain the need of instrumentation knowledge in food industries
13.	20VFPC09	Processing of Cereals, Pulses and Oilseeds	1. Combine various technology for processing cereals, pulses and oilseed and classify the types 2. Describe the instruments and equip ments used for processing. 3. Describe the processing of rice, wheat, corn
14.	20VFPC10	Meat and Poultry Processing Technology	**1.** Recall the nutritional profile of meat, poultry and egg, processing techniques 2. Explain the post mortem changes and preservation methods 3. Relate applicable different processing, regulatory laws of meat processing industry
15.	20VFPS03	Baking Technology	**1.** Relate the theoretical knowledge with practical applications **2.** Demonstrate the preparation of quality products and develop new combination of products 3. Identify, analyse and resolve the problems in preparation process
16.	20VFPS04	Skill Training in Industry	**1.** Relate the theoretical knowledge with industrial practices **2.** Identify the product quality and practice food safety procedures in industry 3. Organize resources for industrial production
17.	20VFPC11	Fundamentals of Food Engineering	1. Summarize the importance of thermal processing used in food industries 2. List the equipments used in food industry 3. Combine the parameters for quantity production, achieve the quality production through the trouble shooting
18.	20VFPC12	Technology of Plantation Crops and Spices	1. Plan the plantation of various crops, able to predict the appropriate harvesting and processing 2. Actualize the farmers for increasing the productivity 3. Experiment in new equipments for handy uses
19.	20VFPC13	Food Packaging	1. Define the functions of packaging, classify the different packaging materials 2. Identify the packaging materials for different types of foods 3. List the standards for food packaging
20.	20VFPS05.	Food Preservation Technology	1. Recall and apply the preservation techniques in food materials 2. Experiment the reactions taking place in

			fruits and vegetables 3. Identify the properties of food, apply the processing techniques to design for food storage
21.	20VFPS06	Skill Training in Industry	**1.** Relate the theoretical knowledge with practical applications 2. Demonstrate industrial products production skills 3. Organize resources for process, analyse the quality parameters of the products
22.	20VFPC14	Dairy Technology	1. List the milk based products, handling 2. Tabulate the processing, storage condition for various milk based products. 3. Execute improvised quality control in the industry, appropriate use of hands on training.
23.	20VFPS07	Confectionery Technology	1. Select quality ingredients for confectioneries **2.** Define the stages of sugar cookery and develop new confectionery products 3. Demonstrate the organized production skills
24.	20VFPS08	Skill Training in Industry	1. Recall processing of milk and its quality factors, relate the theoretical knowledge with industrial processing. 2. Compare laboratory processing methods with industrial processing techniques **3.** Apply industrial processing skills
25.	20VFPC15.	Convenience Foods and New Product Development	1. Experiment in new product studies. 2. Interpret the pros and cons in new product development 3. Assess the current market trends, describe the strategy to market the new product.
26.	20VFPS10	Techniques in Food Quality Analysis	**1.** Relate the theoretical knowledge with practical application 2. Determine the nutrient and mineral content in food materials 3. Experiment on the different properties of foods, demonstrate and experiment the techniques in food analysis.
27.	20VFPS11	Skill Training in Industry	1. List the job roles in food processing industries 2. Formulate new value added products, examine the quality of the product 3. Exhibit equipment handling skills in industry
28.	20VFPS12	Project Work	

M. Phil / Ph. D			
S. No	Course Code	Title of the Course	Course Outcome
1.	18PHFTE01	Research Methodology	1. Understand objective of Research Methodology. 2. Interrupt needs and importance of the Research Design. 3. Determine the measurement and scaling technique used for research. 4. Gain the knowledge in processing and analysis of data using various hypotheses. 5. Analyse the mechanics of writing the Research Report
2.	18PHFTE02	Sensors for Food Technology	1. Understand the different types of sensors used in food technology. 2. Gain Knowledge on different types of Optical Sensors used for the analysis of quality and food 3. Safety. 4. Relate the functions of basic devices used for analysis of micro-organisms 5. Know about the commercial applications of biosensor 6. Understand the applications of Novel sensing receptors used in Food Technology
3.	18PHFT03A	Technology of Frozen Foods	1. Gain basic understating of frozen foods. 2. Understand the different methods of frozen foods. 3. Perceive the quality and safety of frozen foods in food technology. 4. Apply the measuring parameters for checking the quality of frozen foods. 5. Gain knowledge on the different methods of frozen food packaging.
4.	18PHFTE3B	Extrusion Technology of Foods	1. Objectives and importance of extrusion technology 2. To study about types of extruders and its operating procedures. 3. To understand the Functional and Chemical changes during extrusion 4. Illustrate about different types of extruded products 5. To understand about different food legislations.
5.	19PHFTE2	Advances in Food	1. To study about the principles of basic unit and dimensions.

		Process Engineering	2. To understand the rheology and its concepts in food products. 3. To study about the advances in separation processes. 4. To understand the techniques involved in extrusion processing. **5.** To understand about the novel techniques used in food industries.
6.	19PHFTE3A	Sensors and its Application in Food Processing	1. Understand the need and Importance of Measurement in Food Processing. 2. Enrich the Knowledge in Concepts of Sensors and its Application in Food Industry. 3. Develop Sensor strip for Analytical Measurement of food quality Parameters.

B. E. Printing Technology			
S. No	Course Code	Title of the Course	Course Outcome
1.	20BEHS05	Human Values and Professional Ethics	1. Apply ethics in society and discuss the ethical issues related to engineering 2. Analyse the engineering ethics and realize the responsibilities and rights in the society 3 Impart the global issue
2.	20BESM04	Applied Statistics	1. Understand various distributions and to apply statistical concepts to solve problems involving large data 2. Gain knowledge in testing of hypothesis for large and small samples applied to real world problems 3 Test the goodness of fit and independence of attributes and able to apply various types of design of experiments in engineering problem
3.	20BEPS01	Strength of Materials	1. Discuss about the fundamental concepts of stress and strain 2. Determine Shear force & bending moment , bending & shear stresses and slope & deflection in beams subjected to external loads. 3. Apply basic equation of torsion in the design of circular shafts and helical springs
4.	20BEPS02	Electrical Technology	1. Understand and analyse the basic electrical network 2. Gain knowledge on electrical machines and transformers 3. Understand the electrical drives used for DC and Induction motors
5.	20BEPS03	Electrical Engineering Practicals	1. Analyse the electrical circuits. 2. Calculate the three phase electrical power 3. Understand the basic characteristics of transformers and electrical machines
6.	20BEPC01	Printing Processes	1. Understand the functioning of printing industry 2. Distinguish between the various printing processes and their uses 3. Observe the printing / packaging jobs and identify their workflow
7.	20BEPC02	Colour Reproduction	1. Apply the knowledge of colour science in colour reproduction process 2. Determine the strategy for image correction based on colour reproduction principles and standards 3. Work with colour profiles and proofing systems for colour management

8.	20BEPC03	Image Design and Editing Practicals	1. Design graphics for a wide range of media and applications using image editing tools 2. Obtaining creative print designs using editing and retouching techniques 3. Calibrate design quality to standardise the commercial print and publishing industry
9.	20BEMC03	Consumer Affairs	
10.	20BESM07	Computer Aided Numerical Methods	1. Solve algebraic equations and understand the use of interpolation 2. Acquaint the knowledge of various techniques and methods in solving ordinary and partial differential equations 3. Have an exposure of solving problems using software tools
11.	20BEPSO4	Fundamentals of Printing Machine Elements	1. Understand the basic concept of mechanical properties of constructional material and the design procedure for simple mechanism 2. Analyse the performance of basic components and mechanism of printing machines 3. Design the basic components for specific requirement
12.	20BEPS05	Basic Electronics for Printers	1. Understand the basic digital logic system and the describe the functioning of Programmable Logic Devices 2. Discuss the sensors types and illustrate in detail the working of displacement and position sensors 3. Describe the basic of embedded systems and analyse functioning of electronic module units present in the printing machines.
13.	20BEPC04	Printing Substrates	1. Distinguish between various types of paper and paperboards, their properties and uses. 2. Identify the application of substrate based on analysis of their properties 3. Solve simple printing problems by applying their knowledge about substrates
14.	20BEPC05.	Offset Technology	1. Understand the principles of offset and sheet feeding and printing unit configuration 2. Understand the principles of web offset presses 3. Learn, analyze and evaluate the quality of print by implementing industry standardization in both sheet feed and web offset presses
15.	20BEPC06	Colour Management	1. Learn colour standards and evaluate colour by colour measurement 2. Understand and apply the concepts of colour management , profile creation ,conversation and workflow in various printing processes

			3. Understand the advances of colour management and implementing and analyse in various printing process
16.	20BEPC07	Book Publishing Practicals	1. Creation quality designs for book publication as per the industry standards 2. Printing using various printing techniques 3. Evaluating and analyze the print quality in soft proof and hard printed copy
17.	20BEPC08	Offset Practicals	1. Learn to operate a sheet fed offset press and obtain print in various substrates with process colour. 2. Testing and analyse the quality of print 3. Constructing the quality print standards using the outcome of testing
18.	20BEPC09	Quality Control Technology	1. Recognize, compare and measure using statistical quality systems and standards 2. Identify, design and apply the standard testing and record militancy 3. Analysis the various quality control instrumentation and apply the quality testing and standard from prepress to post press
19.	20BEPC10	Flexographic and Gravure Printing	1. Explain the principle and image carrier preparation of flexographic press 2. Identify and analyse the parts with the working principles of the gravure printing press 3. Analysis and implement the QC waste control in flexographic and gravure printing workflow
20.	20BEPC11	Printing Inks and Chemicals	1. Identify the basic raw materials in inks 2. Prepare the inks for different process 3. Classify various print problems and apply the remedial measures based on types of inks
21.	20BEPC12	Digital Printing	1. Describe the basics of handling digital data and describe the pre-flight process 2. Elaborate the process of creating films and categorize the digital print technologies 3. Develop the various applications of digital printing
22.	20BEPC13	Packaging Technology	1. Recall the fundamentals to create package design and evaluate the various packaging properties along with their manufacturing process. 2. Describe and identifying the various types of speciality packages along with various testing methods 3. Simulate product coding in package labelling
23.	20BEPC14	FMCG Practicals	1. Recognize layout design and digital imposition 2. Create a design for various packages, barcodes and labelling 3. Evaluate the quality for package

24.	20BEPC15	Quality Control Practicals	1. Analysis various testing methods for paper and ink 2. Measure print parameters using the appropriate testing 3. Apply the knowledge about ink, paper manufacturing gained by visiting the quality labs in industry
25.	20BEPC16	Print and Publishing	1. Tabulate various print and publishing media, and examine the editorial process for newsprint, periodical, book and digital publishing. 2. Differentiate and create the periodical publishing and electronic publishing layout with its workflow. 3. Create and design digital publishing then interpret the legal aspects in digital printing.
26.	20BEPC17	Print Finishing and Converting	1. Identify various materials operations and explain the operation working principle problems and remedies of paper cutting mechanics. 2. Illustrate and analyse the types of mechanism and operation of folding 3. Analyse and apply various finishing operation and binding.
27.	20BEPC18	Package Designing	1. Reproduce the fundamentals of products and apply for package design process 2. Create and design graphics layout and structural design for package design. 3. Analyse various types of closure and create the package design for the given products.
28.	20BEPC19	Publishing Practicals	1. Compile simple and dynamic web pages. 2. Design complete website with database on back end 3. Create and embed the web page with many media using style sheets for different gadgets
29.	20BEPC20	Package Design Practicals	1. With the basic knowledge about design software create innovative designs 2. Using design concepts for package production for various products 3. Design and prepare a package with suitable functions for given product
30.	20BEHS12	Industrial Engineering	1. Understand the basic knowledge on industrial economics business economics and business economics. 2. Learn and understand the import and export policies and industrial psychology. 3. Cognize various safety measures of printing industries
31.	20BEPC22	Cross Media	1. Understand and analyse the principle of cross

		Publishing	media and Properties of e-books 2. Develop the multimedia concepts advertising knowledge to create advertising 3. Develop web planning solutions
32.	20BEMC04	Disaster Management	1. Learn the types of disasters, causes and their impact on environment and society. 2. Discuss inter-relationship between disaster and development and to draw the hazard and Vulnerability profile of India 3. Evaluate disaster damage assessment and implement disaster management measures
33.	20BEPE01	Professional Electives (PE1) Printing Technology Domain Screen And Textile Printing	1. LearnandUnderstandBasicPrinciplesofScreenPrintingandPreparationofImageCarrierandAnalyse Screen Printing Machines 2. Understand And Apply The Ink And Software And Drying Process Of Screen-Printing Process. 3. Design, Create, Analyse Print and Evaluate the Screen Printing
34.	20BEPE02	Financial Management for Printing	1. Learn and understand concepts on costing and pricing and to estimate the cost of different materials used in printing. 2. Calculate the composite machine hour rate (cmhr) for the machines used in printing 3. Learn and analyse composite machine hour rate (cmhr) for the machines used in printing and the concepts on investment analysis. Learn, analyse and evaluate break even analysis and calculate breakeven point
35.	20BEPE03	Surface Preparation	1. Learn, Create and Design Graphical Layout and Film Assembly and Understand Plate Chemistry and Plate making process and Standardization 2. Optimize the Plate through Quality Control Process and Image Carriers' Preparation for Gravure Printing Process and Screen-Printing Process 3. Apply And Analyse The Recent Offset Plates.
36.	20BEPE04	Packaging Materials	1. Understand and learn the plastic and polymer, packages and the properties of packaging materials. 2. Learn, analyse and apply the glass of metal packaging and discriminate other ancillary materials for packaging. 3. Evaluate the quality control standards used for costing of packaging materials
37.	20BEPE05	Customized Printing	1. Understand, Learn and Design print On Demand System and Digital Photo Book. 2. Learn, Analyse And Apply E-Journal Publication And Digital Marketing.

			3. Analyse, Create and Apply Customised Publication
38.	20BEPE06	Digital Pre-Press and Printing	1. Understand, identify and apply knowledge on image capturing techniques and digital workflow 2. Understand pre-flight and produce proofs and create films and plates 3. Understand and gain knowledge on print jobs in digital press
39.	20BEPE07	Scheduling and Planning For Print Production	1. Understand, analyse and learn the operations of a printing press along with its layout and the Sequencing algorithms for apt printing process 2. Management problems in a printing press 3. Analyse the problems and allocating the resources of firm
40.	20BEPE08	Advertising Techniques	1. Understand and analyse the principle of advertising and the functionary of an advertising agency 2. To use the advertising production knowledge to create advertisements to create the advertising production knowledge 3. To create and develop media planning solutions
41.	20BEPE09	Speciality and Security Printing	1. Understand and learn specifications in specialty printing and security features in printed products. 2. To analyse and classify the techniques, standards and specifications used in speciality printing. 3. Develop security techniques as per the requirement with suitable materials
42.	20BEPE10	Print Plant and Layout Design	1. Understand and analyse the site selection, flow charts and layout procedure for print plant 2. Understand the layout procedure for print plant and press building 3. Evaluating the resource materials and material handling methods to establish a press.
43.	20BEPE11	Printing Machine Maintenance	1. Understand and learn the basic concepts of maintenance management and fundamentals of machine erection and testing. 2. Create a maintenance schedule based on criticality and economics 3. Evaluate equipment effectiveness
44.	20BEPE12	TQM for Graphic Art Industry	1. Understand the Basic Quality Requirement in Printing Industry 2. Learn and Understand quality Gurus and Their Contributions 3. Knowledge on Quality Certification Process for Printing Industry

45.	20BEPE13	Cost Estimation for Printers	1. Understand and analyse the concepts on costing and budgets and its control over sales 2. Learn and identify cost estimation on different material and suitable technique for estimation. 3. Learn breakeven point for a business to have its margin of safety.
46.	20BEPE21	Professional Electives (PE2) Allied Printing Technology Domain Visual Programming	1. Understand & apply the concept of visual programming and the visual basic integrated development environment 2. Develop and analyse simple visual basic applications and remote DB and front end. 3. Analyse and generate reports for the data.
47.	20BEPE22	Microprocessor and Microcontroller	1. Understand and learn the Fundamental of Microprocessors & Microcontrollers 2. Understand The Asion of The Arithmetic and Logic Structure and interfacing 825.5. With Devices 3. Analyse The Memory Interfacing Devices And Peripherals.
48.	20BEPE23	Multimedia For E-Publishing	1. Apply Different Layouts Design for Various Digital Gadgets choosing Proper Software for Web Presentation and Transformation Language. 2. Create and Conceive Different Online Publishing Models and Multimedia Software in E-Publishing 3. Analyse the Software and Tools
49.	20BEPE24	Web Technology	1. Understand and create the knowledge about the fundamentals of html page, xml documents. 2. Analyse and create the xml documentation and css in web pages 3. Design their own web services.
50.	20BEPE25	Image Processing	1. Design, Evaluate and Implement 1-D and 2-D Filter Design Methods and Apply Edge Detection, Image Restoration, Image Segmentation Methods 2. Design and Apply Image Compression Image Matching Methods, Image Enhancement Image Enhancement and Restoration 3. Apply Various Image Processing Techniques Appropriate For Practical Applications
51.	20BEPE26	MIS For Graphic Art Industry	1. Understand the concept of an organisation and its operation and design concept 2. Define recognize and apply the computer networking concepts and DBMS in various application. 3. Analyse the information system through case studies
52.	20BEPE27	Digital Media	1. Define and analyse the principles of digital media dissemination distribution process and

		Management	dam system 2. Analyse different content protection techniques reproduce the digital rights and laws 3. Analyse the recent security development
53.	20BEPE28	Nanotechnology	1. Define and analyse the principles of digital media dissemination distribution process and dam system 2. Analyse different content protection techniques reproduce the digital rights and laws 3. Analyse the recent security development
54.	20BEPE29	3D Printing	1. Understand 3d Printing Concepts, Types, Materials Used And Their Applications. 2 Analyse The 3d Printers Working And Its Configuration. 2. Design 3d Proto Type for Various Applications
55.	20BEPE30	Printed Electronics	1. Understandandacquireknowledgeaboutimportanceofprintedelectronicsitsproductsandscopeoftheindustry 2. Understand and analysis various printing technology for printing electronics its opportunities and advancements. 3. Identify effects of printed electronics on society and environment and find alternate approaches
56.	20BEPE31	Augmented Reality	1. Understand the concepts and AR tools 2. Design and apply augmented reality on various application 3. Create augmented reality on their own.
57.	20BEPE32	Employability Skills	1. Define their ideas using PowerPoint presentations and present themselves with confidence in interviews. 2. Learntofillapplicationsforthejobsonlineanddeveloptheskillsforinteractingwiththegroupmembers 3. Attend the interview confidentially
58.	20BEPE33	Entrepreneurship Development	1. Understand and gain a knowledge about the entrepreneurial aspects and its essence 2. Formulate a business plan and financial plan 3. Run a business successfully.
59.	20BEPV01	Value Added Course Screen Printing	1. Understand the concept and implement screen printing practically 2. Develop a knowledge about drying inks and solvents 3. Design and print on various substrates and develop the entrepreneurial skill
60.	20BEPO01	Open Electives Multimedia Development	1. Understand the principles of multimedia in various media 2. Create design using multimedia software 3. Apply multimedia communication in day to day life

61.	20BEPO02	Augmented Reality Concepts	1. Understand the AR concepts and handle the AR tool 2. Building and designing of AR 3. Apply augmented reality and create augmented reality on their own
62.	20BEPO03	3d Printing Methods	1. Understand 3d Printing Concepts and their applications 2. Select Appropriate Method for Designing and Modelling Applications 3. Analyse the 3d Printers Working and Its Configuration and Design 3d Prototype for Various Applications
63.	20BEPO04	Cross Media Publishing Techniques	1. Understand and Analyse the Principle Of Cross Media and Property of E-Books 2. Develop and Create the Multimedia Concepts and Advertising Knowledge 3. Develop Web Planning Solutions