

Department Name:	P 100 - M.A. (Journalism and Mass Communication)
PROGRAMME OUTCOMES	
<p>PO 1: Demonstrate an understanding of Conceptual and Theoretical aspects of Journalism and Mass Communication.</p> <p>PO 2: Develop thoughts and ideas for multiple formats including print, audio/visual and digital media.</p> <p>PO 3: Apply analytical and vertical thinking to formulate solutions to contemporary societal issues.</p> <p>PO 4: Inculcate a robust understanding of the practical aspects of writing skills, which forms the basis of all other media.</p> <p>PO 5: Acquire reporting and editing skills for print, audio/visual and digital platforms.</p> <p>PO 6: Demonstrate in-depth knowledge of emerging media platforms such as blogs, microblogs, business networking, digital video, digital photography, augmented / virtual reality.</p> <p>PO 7: Understand and apply concepts of professionalism, ethics and morality in various media platforms.</p> <p>PO 8: Acquire skills to understand and appreciate multicultural issues and evaluate social and ethical role of the media.</p> <p>PO 9: Create industry standards creative campaigns in advertising, public relations, digital media marketing, podcasting etc.</p> <p>PO 10: Analyse working of media and infotainment industries through research based studies and project work.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1: Improved communication and media production skills.</p> <p>PSO 2: Adequate theoretical and practical knowledge (technical and application oriented) to be employable in media industry.</p> <p>PSO 3: Ability to demonstrate social concerns, professional ethics and competence to aid in progress and development of the society.</p> <p>PSO 4: Awareness of environmental, developmental, women and gender related aspects of media industry and its impact on society.</p> <p>PSO 5: Ability to analyse, apply and evaluate latest technologies to solve problem in media industry and innovate sustainable solutions for future.</p>	
Semester- I	
Subject and code: PH 101.1 THEORIES OF COMMUNICATION	
Course Outcomes:	
<p>CO 1: Trace the development of theoretical inquiry critically in the field of communication</p> <p>CO 2: Inculcate knowledge of basic theories in the various areas of study within the communication discipline</p> <p>CO 3: Recognize how communication theories apply outside of the classroom and in research</p> <p>CO 4: Analyse the effects mass media on socio-economic fabrics of a society</p> <p>CO 5: Students create their own models of communication</p>	
Subject and code: PH 102.1 ADVANCED REPORTING & EDITING	
Course Outcomes:	
<p>CO 1: Inculcate writing skills for media.</p> <p>CO 2: Demonstrate comprehensive knowledge of journalistic skill of reporting and editing.</p> <p>CO 3: Develop critical and analytical skills while writing for and producing a newspaper.</p>	

CO 4: Daily analysis of newspaper coverage to understand the nuances of print media industry.

Subject and code:PH 103.1 CORPORATE COMMUNICATION AND PUBLIC RELATIONS

Course Outcomes:

CO 1: Understand and demonstrate the use of basic and advanced corporate communication techniques that today's business communication demands

CO 2: Apply conceptual thinking in the area of corporate communication and public relations.

CO 3: Create strategic corporate communication and public relations campaigns using effective research and development tools and techniques

Subject and code:PS 104.1 DEVELOPMENT OF MEDIA

Course Outcomes:

CO 1: Understand the nuances of communication and its development through multiple communication revolutions

CO 2: Develop a comprehensive knowledge of media history in the international, national and regional contexts.

CO 3: Make media studies as a relevant field of interest from the historical point of view.

CO 4: Assess and evaluate the current trends and challenges faced by the Indian media

Subject and code:PS 105.1 MEDIA LAW AND ETHICS

Course Outcomes:

CO 1: Comprehension and upholding of constitutional values and principles for effective and authentic media profession.

CO 2: Develop sincerity and credibility in media profession and inculcate ethical values in any field of media profession

CO 3: Acquire comprehensive understanding of media laws and safe guard them in daily profession.

Semester- II

Subject and code: PH 101.2 COMMUNICATION RESEARCH METHODS

Course Outcomes:

CO 1: Inculcate the rigour of research techniques and methods at master's programme level

CO 2: Evaluate and utilise statistical tools

CO 3: Demonstrate research acumen by creating research proposals/ projects

Subject and code: PH102.2 INTRODUCTION TO AUDIO VISUAL MEDIA

Course Outcomes:

CO 1: Produce communications for different audiences and purposes through audio visual media

CO 2: Plan and create in-depth, research-based broadcast pieces

CO 3: Create and evaluate broadcast packages with the elements of sound, interviews, videography, and narration (written script).

Subject and code: PH 103.2 FILM STUDIES

Course Outcomes:

CO 1: Impart a basic understanding of film form and technique, including a knowledge of basic film terms.

CO 2: Appreciate and utilize different methodological approaches to film CO 3: Analyse and write about film and incorporate appropriate film terminology and film scholarship into the writing. CO 4: Apply narrative principles in students' film works.
Subject and code: PS 104.2 DEVELOPMENT COMMUNICATION
Course Outcomes:
CO 1: Understand and critically evaluate development issues and programmes in India. CO 2: Comprehend the theories and models related to Development Communication. CO 3: Inculcate a sense of social concern as media professionals. CO 4: Develop media tools or messages to propagate sustainable development and social change.
Subject and code: PO 105.2 BROADCAST AND COMMUNICATION (OPEN ELECTIVE)
Course Outcomes:
CO 1: Understand the basics of communication and broadcast media CO 2: Produce communications for different audiences and purposes through audio visual media using a variety of technologies CO 3: Comprehend and evaluate broadcast packages with the elements of sound, interviews, videography, and narration (written script).
Subject and code: PO 106.2 TRAVEL JOURNALISM (OPEN ELECTIVE)
Course Outcomes:
CO 1: Explore and understand the concepts and importance of travel journalism CO 2: Develop technical skills in writing and photography for creating travel blogs CO 3: Understand travel and tourism trends in the contemporary world CO 4: Generate interest for tourism and cultural exposure in India
Semester- III
Subject and code: PH101.3a TELEVISION PRODUCTION (SPECIALIZATION SUBJECT)
Course Outcomes:
CO 1: Develop advanced skills and techniques in television production CO 2: Understand and equip the different stages of pre-production, production and post production in television industry CO 3: Expedite the role of crew and talents in television production through role-play and real-life industry projects
Subject and code: PH 101.3b DIGITAL JOURNALISM (SPECIALIZATION SUBJECT)
Course Outcomes:
CO 1: Develop creative online content and create reliable platform for them CO 2: Learn to host and manage a full-fledged blog creating visibility and publicity of their contents CO 3: Evaluate and implement the web design principles and promote them on different digital platforms
Subject and code: PH 101.3c DIGITAL MEDIA MARKETING (SPECIALIZATION SUBJECT)
Course Outcomes:
CO 1: Understand how and why to use digital marketing for multiple goals within a larger marketing and/or media strategy

CO 2: Evaluate and apply techniques to plan content marketing, develop content for different target audience, and measure its impact.
CO 3: Develop knowledge of Google Analytics and other marketing analytics tools to help get started with website data analytics.

Subject and code: PH 102.3a RADIO PRODUCTION (SPECIALISATION SUBJECT)

Course Outcomes:

CO 1: Understand the functioning radio medium.
CO 2: Develop socially relevant radio programmes.
CO 3: Create recognizable presence of students on the campus based community radio-Sarang.
CO 4: Analyse the functioning of different radio stations in the city and during the industrial tours and encourage students on job opportunities in radio programme production

Subject and code:PH 102.3b KANNADA LANGUAGE PRESS (SPECIALISATION SUBJECT)

Course Outcomes:

CO 1: Discover the relevant role played by journalism in Kannada and develop a taste for it
CO 2: Create or produce and effective journalistic content and publish them on relevant platforms.
CO 3: Inculcate the knowledge and journalism skills with the undergraduate students through peer learning.

Subject and code:PH102.3c CREATIVE STRATEGY & COMMUNICATION (SPECIALISATION SUBJECT)

Course Outcomes:

CO 1: Inculcate knowledge about the theoretical foundations of creative strategy in advertising and marketing communications.
CO 2: Exposure to the issues and concerns in creative strategy and research.
CO 3: Identify and evaluate key concepts within the professional and academic fields of modern-day creative strategy and communication.

Subject and code: PH 103.3 MARKETING COMMUNICATION AND ADVERTISING

Course Outcomes:

CO 1: Inculcate a working knowledge and knowhow about marketing communications strategies and techniques
CO 2: Develop marketing communication strategies along with planning and implementation
CO 3: Evolve ability to solve real marketing communication problems by using scientific methods and procedures

Subject and code: PS 105.3 ENVIRONMENT AND MEDIA

Course Outcomes:

CO 1: Develop a comprehensive knowledge with regard to environment issues and programmes across the world.
CO 2: Learn about environmentalists and get into environmental advocacy through different media fields.
CO 3: Develop a keen eye for current environment trends and news and respond to them effectively
CO 4: Organise environmental media campaigns on different media platforms.

Subject and code: PH 104.3 MEDIA INTERNSHIP
Course Outcomes:
Media internship is a 6-week compulsory exercise. The students are expected to join any media organization and have a first- hand experience of working in the field. They are expected to keep a record of all the work they undertake. A certificate of completion of the 6-week internship must be obtained from the concerned media organization. Students are expected to update on a weekly basis to the concerned faculty about their progress. The internship must be completed before the end of third semester. An assessment and evaluation of the internship will be conducted to award credits. Internship does not have any academic-related assessment.
Subject and code: PO 106.3 FILM APPRECIATION (OPEN ELECTIVE)
Course Outcomes:
CO 1: Learn various components of film and film making and appreciate them from a critical point of view CO 2: Develop a hands- on knowledge in writing film scripts and compare them with reviewed films CO 3: Identify different aspects of films like – mise-en-scene and film making techniques in preproduction, production and post-production period.
Subject and code: PO 107.3 GENDER AND MEDIA (OPEN ELECTIVE)
Course Outcomes:
CO 1: Understand gender issues prevalent in contemporary times. CO 2: Analyse the portrayal of women and the third gender or queer perspectives in mainstream media. CO 3: Evaluate the mainstream media’s coverage of gender issues through multifaceted frameworks. CO 4: Apply the knowledge gained in the course to examine real-life issues outside of the classroom activity.
Semester- IV
Subject and code: PH 101.4 DISSERTATION
Course Outcomes:
Objectives of the Dissertation: The main objective of the Dissertation is to give practical exposure to the students in the field of their study and provide industry-institution interaction. The other objectives are as follows; Students will be able to develop research interest and culture in their respective field of study Students explore the social relevance and application of their respective subject It provides practical knowledge and exposure in their studied area It enables the students to make in depth study of the particular issue and explore solution to the problems the society facing in the field of journalism and mass communication
Subject and code: PH 102.4a ONLINE AUDIO/VISUAL PRODUCTION
Course Outcomes:
CO 1: Discover the research methods utilized in gathering data for developing and evaluating online broadcasting strategy CO 2: Evaluate and analyse audio and video techniques to enhance online productions. CO 3: Develop an awareness and appreciation of ethical pitfalls of online broadcasting.

Subject and code: PH102.4b MAGAZINE JOURNALISM (SPECIALIZATION)	
Course Outcomes:	
CO 1: Identify and apply the principles of graphic design to magazines. CO 2: Develop a correlation between editorial content and visual presentation specific to magazines CO 3: Identify stories that lend themselves to different kind of presentations, including photos, audio, video and infographics.	
Subject and code: PH 102.4c INSTRUCTIONAL DESIGNING AND CONTENT WRITING	
Course Outcomes:	
CO 1: Evaluate various technology skills with application of learning theory to maximize the effectiveness of education. CO 2: Analyse diverse models of instructional design and content writing best practices CO 3: Create effective business and technical content through related content writing and techniques.	
Subject and code:PROJECT	
Course Outcomes:	
CO 1: Develop industry standard projects in the field of student's chosen field of specialization CO 2: Understand how to contribute to society's progress and development through practical implication of media concepts. CO 3: Inculcate crucial industry specific attitudes like project management, time management and stress management	
Subject and code: PS 104.4 MEDIA AND CULTURE STUDIES	
Course Outcomes:	
CO 1: Develop a critical perspective towards culture and hegemony. CO 2: Evaluate the relationship between power and media, which promotes cultural traits in society CO 3: Analyze the relationship between visual culture and global capitalism CO 4: Develop skills to carry out cultural analysis of media	
Subject and code: PS 105.4 POLITICAL COMMUNICATION	
Course Outcomes:	
CO 1: Evaluate the key concepts and theories in political communication CO 2: Develop knowledge of practical aspects and paradigms of political communication science CO 3: Analyse mediatization of politics in elections, campaigns and how media used to achieve policy goals.	

Department Name:	P 110 M.A. (Economics)
PROGRAMME OUTCOMES	
PO 1: To develop an understanding about various concepts and principles in Economics. PO 2: To be able to describe the working of the economy both domestic and international. PO 3: To enable the students to recognize the practical possibilities of economic theory in real life. PO 4: To analyses the various sectors and its performance in the development process. PO 5: To create awareness on the inter-linkages between the political system and economic theories.	

PO 6: To assess the impact of various policies on the welfare of the community.
PO 7: To ensure the application of the economic theories to facilitate sustainable human life.
PO 8: To develop skills to have an orientation to do fruitful research in the discipline.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: To prepare the students with a laborious and broad understanding of the fundamentals of economics with various aspects of consumer behaviour, demand analysis, production theory, costs, theory of traditional markets and equilibrium of the firm. This will enable the students to take decision in the context of market interdependence, complexity, uncertainty and informational asymmetry.

PSO 2: To cover all major theories and models dealing with the issues pertaining to economic growth and development where the learners will be able to realize the nature of the deficiencies of developing nations, need for sustainable growth, reconstruction & development and to suggest policy measures to rectify them and also to explore new avenues of growth.

PSO 3: The extremes of poverty and wealth will be adequately addressed through a comprehensive economic analysis of the public sector which empowers the student to understand and analyse public

policies and problems with an insightful vision of fiscal institutions which underline budgetary policies in general and Indian experience in particular.

PSO 4: To provide adequate knowledge of statistical techniques to analyse economic problems through the development of research skills includes, framing testable hypotheses, selection of precise statistical tests, locate appropriate data for testing hypotheses, reject/accept hypotheses correctly, evaluates results, and write up the research findings.

PSO 5: To develop a vision to achieve a mission of attaining a sustainable society by applying theoretical and empirical analysis of sources of and solutions to environmental problems, with application to local pollution challenges and global environmental issues such as climate change.

PSO 6: To make the students aware of the quantitative and the qualitative aspects and characteristics of the population through various demographic techniques, importance of population in economic development, various theories that explains the growth of population and research directions in the field of population studies in a country.

PSO 7: To train the students on latest theoretical developments in macroeconomics for empirical analysis, integrate method and technique to evaluate policy measures, understanding developments in labour market and gauge the trade-off in the deployment of resources to alternative ends.

PSO 8: To prepare the students to understand and respond to economic issues and forces of Globalisation, free flow of trade in goods, governance of services and capital and it's rapidly changing scope and nature in international business and trade.

Semester- I

Subject and code: PH 111.1: MICRO ECONOMIC ANALYSIS

Course Outcomes:

CO 1: The student gets equipped with the knowledge and skill in effective decision making under uncertain market situations.

CO 2: Understand the theories related to different market forms.

CO 3: Able to understand the functioning of the varied markets.

CO 4: The student acquires skills in allocating scarce resources among alternative uses.

CO 5: Able to make decisions in varied economic situations.
CO 6: Able to critical evaluate the functioning of the market.

Subject and code: PH 112.1 DEVELOPMENT ECONOMICS

Course Outcomes:

CO 1: Students will be able to understand the use of economic analysis in addressing important issues of developing countries.
CO 2: To understand how the presence of externalities could influence the growth process let us focus on learning by doing externality. There are a number of firms in the economy and each uses the same production technology with diminishing returns.
CO 3: Understand the role of agriculture, industry, and trade in the development process of the less developed countries.
CO 4: Understand the extent to which economic theories may be helpful in the design of development policies in the less developed countries.
CO 5: Learners should understand the need for sustainable growth, reconstruction and development. As the inequalities of the past and present - especially the extremes of poverty and wealth - cannot be adequately addressed by conventional socio-economic policies alone, other innovations can also be explored.
CO 6: Use theories (models) to analyse real and hypothetical economic circumstances and to derive policy solutions to the problems posed in these circumstances.

Subject and code: PH 113.1 STATISTICAL TECHNIQUES FOR ECONOMIC ANALYSIS

Course Outcomes:

COURSE OUTCOME:
CO 1: The students will be able to describe and discuss the key terminology, concepts used in statistical techniques for economic analysis.
CO 2: The students can understand the methods used for analysis and the uses and limitations of statistical analysis including a discussion of advantages, disadvantages, and necessary assumptions.
CO 3: To derive the results of the statistical techniques and economic interpretation of those results.
CO 4: To understand and critically discuss the issues surrounding sampling and significance
CO 5: It helps to develop research skills including frame testable hypotheses, select correct statistical tests, locate appropriate data for testing hypotheses, reject/accept hypotheses correctly, analyzes results, and It also contributes to making appropriate decisions in the light of the researcher's findings.
CO 6: To measure the effect of change and discover techniques to improve decision-making process

Subject and code: PS 114.1 ENVIRONMENTAL ECONOMICS

Course Outcomes:

CO 1: To understand the relationship between environment and economic growth; how economic growth affects environment; how environment development programmes affect economic growth; the tradeoff.
CO 2: To create basic ideas of the cost of environmental growth and sustainable policy approach to prevent environmental degradation, green accounting, methods of environmental valuation, Environmental concerns, environmental education, environmental awareness, environmental laws, environmental hazards and economics of recycling.

CO 3: To enable the student to focus on economic effects of environmental policies around the world. It is a science emphasis on natural resources and its efficient allocation, management with alternatives, and environmental indemnities like air, water soil pollution, solid waste management, and global warming etc.

CO 4: Explain how something can be both “environmentally destructive” and “economically optimal”; and how something can be environmentally beneficial and economically suboptimal.

CO 5: Helps to examine the relationship between the economy and the environment in the context many activities started by environmental economists, activists and nature lovers.

CO 6: Identify factors to find solutions to environment problems that are relevant to protect the welfare of the people.

Subject and code: PS 115.1 PRINCIPLES OF BANKING

Course Outcomes:

CO 1: The students ‘will get the knowledge of the structure and role of banking in an economy.

CO 2: To develop skills in students in understanding the functioning of various banking activities

CO 3: To gain the up-to-date knowledge regarding the banking terminologies.

CO 4: To categorize and analyze banker – customer relationship

CO 5: Able to understand the payment and collection procedure of negotiable instruments

CO 6: Able to understand the facilities available and utilization of the same at different circumstances.

Subject and code: PS 116.1 ECONOMICS OF DEMOGRAPHY

Course Outcomes:

CO 1: Students are able to explore population changes over time; elements of demography; child survival and mortality; family and households and demographic change.

CO 2: Understand the demography of social and economic inequality, role of women, urbanization, migration and fertility.

CO 3: Examine world demographic patterns, synthesizing the data and issues surrounding the importance of population to public health.

CO 4: Able to critically evaluate the issues related to demography.

CO 5: Comprehend the basic concepts and definitions in demography and identify the various sources of data in demography.

CO 6: Prepare the students for variety of challenging careers through innovation in teaching and research.

Subject and code: PS 117.1 INDUSTRIAL ECONOMICS

Course Outcomes:

CO 1: The student gets the skill of efficient and economic use of scarce resources.

CO 2: Understand the various theories related to wages, labour, firm etc.

CO 3: The student gets equipped with the knowledge and skill in effective decision making under uncertain market situations.

CO 4: Understand the role of unions and its bargaining powers.

CO 5: Critically evaluate the issues related to labour and firms.

CO 6: The student acquires skills in allocating scarce resources among alternative uses.

Semester- II

Subject and code: PH 111.2: MACRO ECONOMIC ANALYSIS

Course Outcomes:

- CO 1: Explain the functioning of various sectors of the economy.
- CO 2: Develop an understanding of the various theories related to macro variables.
- CO 3: Demonstrate an understanding of the macroeconomic implications of decisions made by diverse economic entities.
- CO 4: Able to comprehend the link of various sectors in an economy.
- CO 5: Integrate theoretical knowledge to evaluate policy measures
- CO 6: Analyse trade-off in the deployment of resources to alternative ends.

Subject and code: PH 112.2 MATHEMATICAL TECHNIQUES FOR ECONOMIC

Course Outcomes:

- CO1: To familiarize the students with the mathematical economics terminologies
- CO2: Able to build models by expressing words in symbols, numbers and equations
- CO3: Able to apply economic theory and methods to selected real world economic problems.
- CO4: Able to demonstrate analytical and critical thinking skills and to apply and interpret quantitative, qualitative and graphical information in a problem-solving context.
- CO5: To equip students with the flexibility and skills necessary to succeed in a constantly changing environment.
- CO6: A new dimension of scientific, logical and critical thinking, which will assist the mind to solve personal, professional and social problems and guide the students to take wise decisions.

Subject and code: PH 113.2 INTERNATIONAL ECONOMICS

Course Outcomes:

- CO 1: Identify and analyse different theoretical models of international economics in light of 'real world' situations.
- CO 2: Understand major issues in international finance, be able to deal with them analytically, and identify possible resolutions for those issues.
- CO 3: Analyse the determinants, patterns and effects of international trade within a general equilibrium framework, where the interrelationships amongst product and factor markets in an economy are explicitly taken into consideration.
- CO 4: Distinguish between the efficiency implications and distributional consequences of trade and trade policy.
- CO 5: Discuss and explain specific policy issues such as 'environmentalism as protectionism'; international dumping; the choice of exchange rate regime; the desirability of free capital flows.
- CO 6: This course advances understanding of economics across business and the public sector with critical skills and competencies.

Subject and code: PS 114.2 FINANCIAL INSTITUTIONS AND MARKETS

Course Outcomes:

- CO1: To outline the basics of Indian financial systems and its components
- CO2: To provide students with an introduction to the theory and practice of financial instruments.

CO3: Explain financial institutions and how firms obtain funds in the financial markets.
 CO4: To analyze and evaluate financial markets, how securities are traded, mutual funds, investment companies, and investor behavior.
 CO5: To explain how the financial services component industries (insurance, banking, securities, real estate and financial planning) interact.
 CO6: Understand the importance of the financial sector in directing the use of scarce capital and able to analyze the various financial sector reforms in India.

Subject and code: PS 115.2 RESEARCH METHODOLOGY AND ETHICS

Course Outcomes:

CO 1: Students can develop testable hypotheses, differentiate research design and/or statistics, evaluate aptness of research conclusions, and generalize them appropriately.
 CO 2: Students can design and conduct quantitative or qualitative research studies in laboratory or field settings. Students use research data to formulate or evaluate new research questions, using reason and persuasion in a logical argument.
 Students can summarize and evaluate a body of research including primary literature, and
 CO 3: can compare psychology's methods with other disciplines' methods.
 CO 4: Demonstrate a logical argument, analyse and interpret data and evaluate alternative perspectives on the basis of objective reasoning. Communicate and present complex arguments in oral and written form with clarity and succinctness.
 CO 5: More awareness on Intellectual property Rights and Patents.
 CO 6: Able to write original research articles following ethical guidelines and practices in conducting the research and publication of papers.

Subject and code: PS 116.2 AGRICULTURAL ECONOMICS

Course Outcomes:

CO 1: Able to understand the theories of agricultural economics.
 CO 2: Gain knowledge in the importance of the primary sector in Indian economy.
 CO 3: Write texts in various forms, with an identified purpose, that respond to specific audience CO 3: needs, incorporate research or existing knowledge, and use applicable documentation and appropriate conventions of format and structure.
 CO 4: Capable of using mathematical, computational, statistical or formal reasoning (including reasoning based on principles of logic) to solve problems, draw inferences and determine reasonableness.
 CO 5: Students will be able to identify an appropriate theoretical framework, a suitable analytical method, and undertake an informed empirical analysis.
 CO 6: Students will have a good general understanding of agricultural production functions, cost and profit functions, math programming models, and non-optimizing simulation models.

Subject and code: PS 117.2 ECONOMICS OF HUMAN RESOURCE DEVELOPMENT

Course Outcomes:

CO 1: Knowledge of Industrial Organizational Behavior, Development, & Change Strategies: Given an organization's target for development or change, analyze organizational and work behavior in relation to the target, evaluate the need for and influences of change on the organization and organizational members, and apply appropriate models, theories, and principles to facilitate healthy change and development.
 CO 2: Competency in Diversity as it Applies to Industrial Organizational Practices: Analyze and evaluate how diversity influences industrial organizational issues, and develop change

strategies that demonstrate an appreciation of how diversity influences individuals and groups within the organization.

CO 3: Students may obtain frameworks and tools to effectively analyze and approach various organizational situations.

CO 4: Develop an organisational culture in which superior-subordinate relationships, teamwork and

association among sub-units are solid and contribute to the proficient wellbeing, motivation and pride of employees.

CO 5: Obtain or refine competences essential to achieve numerous roles connected with students current or anticipated impending roles.

CO 6: The study of human resource development emphasis on efficiency of individuals as productivity in itself is an important organisational and personal goal.

Subject and code: PO 118.2 BANKING AND FINANCE

Course Outcomes:

CO1: To understand the Origin and the growth of the Indian Banking System.

CO2: To elucidate the broad functions of various types of banks

CO3: To evaluate the performance of the developmental banking institutions

CO4: Able to demonstrate an awareness of the current structure and regulation of the Indian financial services sector.

CO5: Discuss the impact of government policy and regulations on the banking sector.

CO6: To understand the working of development financial institutions in the development of rural sector, farmers, industries and financial market.

Semester- III

Subject and code:PH 111.3: MONETARY ECONOMICS

Course Outcomes:

CO 1: Develops the skill to know the interdependence and complexity of the economic system.

CO 2: Skill is developed to understand the monetary policy and its working in the system as a stabiliser.

CO 3: Able to understand the various theory related to monetary economics.

CO 4: Recognise the interrelation of the money and product market in the economy.

CO 5: Understand the working of the monetary policies in the stabilization process.

CO 6: Critically evaluate the policies related to stabilising the economy.

Subject and code:PH 112.3 ECONOMETRICS

Course Outcomes:

1: Able to explain the relation between economic theory and Econometrics.

CO 2: Develop the capacity to understand the various tools in Econometrics.

CO 3: Ability to understand the usefulness of econometric tools.

CO 4: Skills developed to analyse economic problems using econometric tools.

CO 5: Analyse the problems associated with econometric models.

Subject and code: PS 113.3 HEALTH ECONOMICS

Course Outcomes:

CO 1: Helps to analyse the importance of health as a major determinant of economic growth.

CO 2: Gain a deeper understanding of evaluating and creating dynamic and flexible

strategies for healthcare delivery.

CO 3: Have competence to apply economic concepts and models to the fields of demand for health, demand for health services, demand for health insurance, provision of health insurance and provision of health care.

CO 4: Be able to design public drives in preventive medicine and apply social marketing techniques, both addressing public will and individual behaviors.

CO 5: Provide useful insights into the delivery of health care, its economic evaluation that provides the bulk of health economists' work and is of most relevance to managers and practitioners.

CO 6: The course helps to understand the increasing importance of precision medicine and real-world

situation that impacting medical affairs professionals, medical science liaisons, and have to be able to have meaningful conversations with healthcare providers about health economics concepts. Comprehend the structures of marketing management in healthcare organisations, and the steps through which marketing helps an organisation to identify the needs of and focus on its customers.

Subject and code:PS 114.3 LABOUR ECONOMICS

Course Outcomes:

CO 1: By the end of this course, students will be able to understand the basic theories of labour markets

CO 2: Able to understand the labour market policy outcomes.

CO 3: Able to analyse how theoretical understanding of the labour market and empirical approaches to the labour markets are related.

CO 4: Able to identify the role of government policies in labour welfare.

CO 5: Show understanding of commonly used data and methods in applied labour market research.

CO 6: Demonstrate the ability to acquire and convey content in international scientific literature in the field of research.

Subject and code:PS 115.3 DEVELOPMENT BANKING

Course Outcomes:

CO1: To understand the growth and structure of development banking Institutions in India

CO2: To analyse the functions of modern banking financial services and its importance

CO3: To enable the students get familiarized with Mutual Funds

CO4: To acquaint the students in respect to the investment decisions related to Derivative market

CO5: To understand the dynamics of capital market, money market and to learn the importance to be updated on the developments of the banking sector and practice the same.

CO6: Understanding the working of development financial institutions in the development of rural sector, farmers, industries and financial market.

Subject and code:PS 116.3 ENERGY ECONOMICS

Course Outcomes:

CO 1: Understand basic economic concepts that underlay energy production and end use.

CO 2: Describe the sources of energy and the scarcity associate with it.

CO 3: Able to identify how local, regional, and global institutions affect energy markets

and prices.

CO 4: Apply the uses of energy resources efficiently in alternative uses.

CO 5: Become familiar with historical and contemporary public policy issues related to energy globally.

CO 6: Be able to apply this knowledge to analysis of specific energy industries and policy questions.

Subject and code:PO 117.3 CONTEMPORARY INDIAN ECONOMY

Course Outcomes:

CO 1: Students are able to have a critical understanding of the Indian economy so that they may be able to engage meaningfully in debates regarding the country's economy

CO 2: Understand the formulation of economic policies and its analysis.

CO 3: Able to comprehend the broad contours like the status, issues and policies of the Indian economy at the aggregate as well as sectoral levels.

CO 4: Describe the experiences in the pre as well as post reform years, keeping the colonial experience at the background.

CO 5: Have a general understanding of the corporate, geo-political, cultural and social factors that define the Indian economic, cultural and technological landscape at the present time.

CO 6: Critical understanding of the global policies influencing Indian economy.

Semester-IV

Subject and code:PH 111.4 PUBLIC ECONOMICS

Course Outcomes:

CO 1: Perform economic policy analysis by applying microeconomic principles and theories

CO 2: Theoretical and practical expertise on a selected field of Public Economics and competence in applying advanced economic theory and methods in investigating issues concerning Public Economics.

CO 3: Use models to describe economic phenomena; analyze and make predictions about the impact of government intervention and changing market conditions on consumer and producer behavior and well-being.

CO 4: Employ economic theory, broadly defined, to provide an original analysis of current or historical events, to analyze social problems, and evaluate alternative public policy choices.

CO 5: Be aware of the complex nature of public finance reform – the political dimension, change management, capacity development, the constraining dimension of functional linkage. Be able to question the nature of relevance of some popularly promoted public finance reforms – such as performance budgeting, budgeting by objectives, activity-based budgeting.

CO 6: Understand the idea of sequencing in public finance reform and improvement, and that any sequencing must be adapted to the situation in any country; identify why sequencing is important because "things" take time and "things" should take time.

Subject and code:PH 112.4: INDIAN ECONOMY

Course Outcomes:

CO 1: Students are able to have a critical understanding of the Indian economy so that they may be able to engage meaningfully in debates regarding the country's economy

CO 2: Understand the formulation of economic policies and its analysis.

CO 3: Able to comprehend the broad contours like the status, issues and policies of the Indian economy at the aggregate as well as sectoral levels.

CO 4: Describe the experiences in the pre as well as post reform years, keeping the colonial experience at the background.

CO 5: Have a general understanding of the corporate, geo-political, cultural and social factors that define the Indian economic, cultural and technological landscape at the present time.

CO 6: Critical understanding of the global policies influencing Indian economy.

Subject and code: PS 114.4 ECONOMICS OF INSURANCE

Course Outcomes:

CO1: To understand the insurance terminology and contract features.

CO2- To understand the concept of insurance and its evolution

CO3: To evaluate client insurance and risk management needs.

CO4- To understand the different needs of customers on insurance products

CO5: To Identify and explain features of private and public insurance available to meet each identified need.

CO6: To understand the business operations and market condition in Insurance Companies

Subject and code: PS 115. 4: OPERATIONS RESEARCH FOR ECONOMIC ANALYSIS

Course Outcomes:

CO 1: Able to understand the usefulness of operations research in solving economic problems.

CO 2: Describe the various techniques of operations research.

CO 3: Students are equipped to use the tools like transportation table, assignment to analyse and solve problems relating to cost, marketing, production etc.

CO 4: Be able to understand the characteristics of different types of decision-making environments and the appropriate decision making approaches and tools to be used in each type.

CO 5: Able to prioritise the specific use of the techniques of operations research.

CO 6: Be able to design new simple models.

Subject and code: PS 116.4 INTERNATIONAL FINANCE

Course Outcomes:

CO 1: Familiarity with financial concepts and analytical techniques and introduce their application to international transactions.

CO 2: Ability to relate concepts and knowledge in different areas which support the learner to solve problems and help to take decisions in complex as well as changing environments.

CO 3: Provide an in-depth understanding of the process and techniques used to make international investment decisions.

CO 4: Ability to analyse the causes of historical exchange rate movements and apply the models to solve the wide range of current issues in international finance.

CO 5: Review the problems of dealing in foreign currency and the advantages and disadvantages of overseas funding.

CO 6: Obtain a good working knowledge of the crucial questions adjacent to international capital flows, FDI, foreign exchange rate determination and exposure management, international capital markets and institutions, and develop an understanding of the working of the financial management of a multinational firm.

Subject and code: PS 117.4 RURAL BANKING
Course Outcomes:
<p>CO 1: Understand the working of banks in rural areas.</p> <p>CO 2: Students get the knowledge of the credit structure in the rural economy.</p> <p>CO 3: Helps to understand the various problems of the rural economy without adequate credit facility.</p> <p>CO 4: Students are able to grasp the importance of various sources of rural credit in the development of an economy.</p> <p>CO 5: Assess the role of rural economy in the development of a nation.</p> <p>CO 6: Analyse the usefulness of effective policy measure in improving rural credit.</p>

Department Name:	P 120 M.A(English)
PROGRAMME OUTCOMES	
<p>PO- 1 Greatly enhance their foundational knowledge about the history, literature, gender, culture, race and other perspectives of comprehending human experience.</p> <p>PO-2 Independently enquire into the pre-existing knowledge sources and assess them.</p> <p>PO-3 Efficiently take up competitive exams, interviews and other similar situations to excel.</p> <p>PO-4 Design and undertake individual research which will contribute significantly to the future ideological and societal developments.</p> <p>PO -5 Analyze and articulate the range of position that challenges the prevailing social, political, economic, ontological and ethical framework.</p> <p>PO-6 Integrate various theories and methodologies with social and environmental Consciousness</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO – 1 Create a social awareness in terms of society, culture, ethnicity, ecology and gender backgrounds of literature.</p> <p>PSO - 2 Utilize the different critical approaches and demonstrate them in the prescribed texts.</p> <p>PSO -3 Develop skills of research through interpretation, critical thinking and clear writing.</p> <p>PSO -4 Compile their research by applying research methodology.</p> <p>PSO – 5 Evaluate teaching-learning process through various teaching aids.</p> <p>PSO – 6 Identify the significance of internationally acclaimed works through the writings of highly celebrated writers including translated versions.</p> <p>PSO - 7 Recognize the significance of their social and professional responsibilities as citizens with integrity.</p> <p>PSO - 8 Develop analytical, research-oriented and organizational skills</p> <p>CO (Course Outcomes)</p>	
Semester- I	
Subject and code: H 121.1 - Paper I: British Literature I (Medieval Literature to Neoclassical Literature)	
Course Outcomes:	
<p>CO 1: Enabling the students to understand the beginnings of English Literature</p> <p>CO-2: To gain an in-depth knowledge about the age and authors</p> <p>CO 3: To gauge how the era began to formulate the notions of England and English</p> <p>CO-4: Express the socio-cultural and religious practices of British people during that period</p>	

Subject and code: PH 122.1 - Paper II: Literary Criticism
Course Outcomes:
CO 1: To introduce the students to the concept of Literary Criticism CO 2: To create a working knowledge of the different types of 'criticisms' CO 3: Understanding the 'establishing' of the canon CO 4: To be able to apply some criticism to the texts
Subject and code: PH 123.1 - Paper III: Research Methodology and Ethics
Course Outcomes:
CO 1: To introduce the students to the basics of doing research. CO 2: The paper will focus on how to use the correctly write and document the thesis CO 3: Give information various approaches to studying and doing research in literature CO 4: Will guide the students to do ethical and original research
Subject and code: PS 124.1 - Paper IV: Modern Indian Theatre
Course Outcomes:
CO 1: To introduce the students to origins of theatre in in India CO 2: To help students to critically learn to evaluate and read plays CO 3: Understand the contributions made by the theaters to Indian art and culture CO 4: To be made familiar with the various techniques employed in plays
Subject and code: PS 125.1 - Paper V: Children's Literature
Course Outcomes:
CO 1: Introduce the students to the genre as a serious academic activity CO 2: Highlight the way in how a children's text can be 'read' CO 3: Discuss the complexities of the genre, Children's Literature CO 4: Examine the role and popularity of the authors of these texts
Subject and code: PS 126.1- Paper VI: Linguistics and Semiotics
Course Outcomes:
CO 1: equip the students with the various techniques of phonology, morphology, syntax CO 2: Understand and analyse the relationship between language and society CO 3: Analyse the nuances associated with study of semiotics CO 4: Practical experience in reading and analyzing signs
Subject and code: PS 127.1 - Paper VII: European Literature
Course Outcomes:
CO 1: To help students read texts in the wider context of European history. CO 2: Contextualize the text and read it in relation to the immediate present. CO 3: Understand the contributions of the authors to European Art and Culture CO 4: Understand the nuances of various movements associated with European Literature
Subject and code: PS 128.1 - Paper VIII: Ecocriticism
Course Outcomes:
CO 1: Introduce the students to the genre of Ecocriticism CO 2: Examine the relation between environment and humanity CO 3: Analyse the texts to enable a deeper understanding of the complexities of our environment and its protection CO 4: Understand related theoretical frameworks like ecofeminism, eco aesthetics, so on
Subject and code: PS 129.1 - Paper IX: Literature from Canada, Australia and New Zealand
Course Outcomes:

CO 1: Understand the contribution of Canada, Australia and New Zealand to Literature in English
CO 2: Master the major literary trends in these countries
CO 3: Analyse the ethnic and cultural diversity present in these countries
CO 4: Examine the art form of these place's Literature

Semester- II

Subject and code: PH 121.2 - Paper X British Literature II (The Romantics and the Victorians)

Course Outcomes:

CO 1: To introduce the Romantic and Victorian eras to the students
CO 2: To critically analyse the texts of the authors of the time
CO 3: To gauge the rise of industries and technology in the socio-cultural context
CO 4: Comprehend Britain's growing domination around the world

Subject and code: PH 122.2 - Paper XI: Literary Theories

Course Outcomes:

CO 1: Introduce the students to the concept of "Literary Theories"
CO 2: Develop a thorough understanding of the texts prescribed for study
CO 3: Enhance their critical skills by learning to read and interpret texts
CO 4: Application of relevant theories to the concerned texts

Subject and code: PH 123.2 - Paper XII: Indian Writing in English I

Course Outcomes:

CO 1: Understand the origins of the term, Indian Writing in English
CO 2: Critically examine the writers in the early days of Indian Writing in English
CO 3: Examine the term Indian and the nuances associated with it
CO 4: Evaluate the role of English in the context of the Indian subcontinent

Subject and code: PS 124.2 - Paper XIII: Film Studies

Course Outcomes:

CO 1: To learn and have a greater understanding on how to read and analyze film
CO 2: To familiarize major film theories and movements
CO 3: To understand major concerns in Indian Films
CO 4: To study the cultures as represented in Kannada films on the region Dakshina
Kannada

Subject and code: PS 125.2 - Paper XIV: Twentieth Century Asian and Middle Eastern Fiction

Course Outcomes:

CO 1: Introduce the students to the canon fiction of Asia and the Middle East.
CO 2: Examine the role played by these writers in the literary scenario of their country
CO 3: Understand the individual countries culture and ideology
CO 4: Understand the diversity of cultures, ideologies and beliefs that are present in the world.

Subject and code: PS 126.2 - Paper XV: Fantasy Literature

Course Outcomes:

CO 1: Examine the origins of the, genre Fantasy Literature
CO 2: Evaluate the role played by the authors in the development of the genre
CO 3: Understand and evaluate the various worlds of fantasy
CO 4: Understand and evaluate Fantasy as a serious academic pursuit

Subject and code:PS 127.2 - Paper XVI: Literature from Africa and the Caribbean Islands
Course Outcomes:
CO 1: Introduce the students to the Literature from Africa and the Caribbean Islands CO 2: Evaluate the cultural diversities present in the texts prescribed for study CO 3: Understand the histories of these people CO 4: Examine the texts from the perspectives of colonisation and slavery
Subject and code:PO 128.2 -Paper XVII: CBCS – Reading Literature
Course Outcomes:
CO 1: Introduce students to the various genres in literature CO 2: Evaluate the concept of the text, the work and the canon CO 3: Help students develop the basic skills in reading the texts CO 4: Employ Reading strategies to analyse the text
Semester- III
Subject and code: PH 121.3- Paper XVIII: British Literature III (Modernism to Postmodernism)
Course Outcomes:
CO 1: Introduction of the terms Modernism and Postmodernism CO 2: Evaluate the devastating histories of the time and its impact CO 3: Examine the rise of new movements in art CO 4: Evaluate the texts prescribed for study on the basis of the socio-cultural circumstances
Subject and code:PH 122.3- Paper XIX: English Language Teaching
Course Outcomes:
CO 1: Familiarize the learners with the basics of language teaching CO 2: Make the learners understand the basics of language learning CO 3: Help the students in learning how testing is done for English as a discipline CO 4: Make them understand the process of generating learning material
Subject and code: PH 123.3-Paper XX: American Literature I
Course Outcomes:
CO 1: Identify and recognize the modes and motifs of American Literature CO 2: Compare, contrast and co-relate American literature with other national and regional literatures CO 3: Evaluate the history to understand the formation of the American State CO 4: Evaluate the texts to understand the essence of American Culture
Subject and code:PH 124.4-Paper XXI: Indian Writing in English II
Course Outcomes:
CO 1: To understand the latter trends in Indian Writing in English CO 2: To examine the formation of India as an independent state CO 3: Evaluate the continued role played by the English in the Indian Subcontinent CO 4: Discuss the role played by the authors in the final development of the genre
Subject and code:PS 125.3-Paper XXII: Science Fiction
Course Outcomes:
CO 1: Examine the origins of the, genre Science Fiction CO 2: Evaluate the role played by the authors in the development of the genre CO 3: Understand and evaluate the various worlds of Science Fiction CO 4: To evaluate the cultural nuances present in the science fiction world

Subject and code: PS 126.3- Paper XXIII: Folklore and Mythology
Course Outcomes:
CO 1: Familiarize the students with the theories of folklore and myths CO 2: Introduce them to the inter-disciplinary nature of the study of folklore and myth CO 3: Examine the rendition of the original myths and the texts prescribed for study CO 4: Develop interpretative skills to analyse folktales and myths on their own
Subject and code:PO 127.3-Paper XXIV: CBCS – Interpreting Literature
Course Outcomes:
CO 1: To understand some basic literary criticism concepts CO 2: To understand the application of criticism to select texts CO 3: The students will be able to interpret the text by themselves CO 4: To be able to apply some basic theory to the texts chosen
Semester-IV
Subject and code: PH 121.4 - Paper XXV: Postcolonialism
Course Outcomes:
CO 1: To make the students familiar with terms of colonial, postcolonial, neo-colonial, so on CO 2: Make use of postcolonial critical concepts to analyse cultural and socio-political conditions CO 3: Critique the specific meanings of the postcolonial condition CO 4: Will be able to understand the dimensions of colonialism in the postcolonial world
Subject and code:PH 122.4 - Paper XXVI: Cultural Studies
Course Outcomes:
CO 1: To make students familiar with the term, Culture and its nuances CO 2: Evaluate the role how culture is a social construct that needs to be analysed CO 3: Evaluate the role of hegemony, media, institutions, so on in creating culture CO 4: Analyse the texts from the perspective of Cultural Studies
Subject and code:PH 123.4- Paper XXVII: American Literature II
Course Outcomes:
CO 1: To continue examine the growth of American Nation into a super power CO 2: To discuss the experiences of other ethnic groups in America CO 3: To evaluate the texts from the perspective of various theories CO 4: To evaluate modern day America as a melting pot
Subject and code: PH 124.4-Paper XXVII Project
Course Outcomes:
CO 1: To produce a research project at the end of the academic year CO 2: To follow all rules related to academic and research writing CO 3: To produce quality research CO 4: To try to publish the work if possible
Subject and code: PS 125.4- Paper XXIX: Cultures of Dakshina Kannada in Translation
Course Outcomes:
CO 1: To introduce the students to basic concepts in translation. CO 2: Highlight the rich tradition available in the regional literature of Dakshina Kannada CO 3: Enable students to form their own interpretations of the multihued culture of modern-day India CO 4: Be able to perform some basic translation activities

Subject and code: PS 126.4- Paper XXX: Diaspora Literature
Course Outcomes:
CO 1: To critically examine the term, Diaspora and Dispora theory CO 2: To examine the texts and understand the nuances of Diaspora CO 3: To evaluate the problems of the diaspora community CO 4: To understand the culture and needs of the diaspora community
Subject and code: PS 127.4- Paper XXXI: Gender Studies
Course Outcomes:
CO 1: To critically examine the term, Gender CO 2: To evaluate the problems of the groups that forms the gender minority CO 3: To critically evaluate on the role of patriarchy in society CO 4: To examine the texts and understand the nuances of gender
Subject and code: PS 128.4-Paper XXXII: Literature from the Margins
Course Outcomes:
CO 1: To critically examine the term, subaltern, hegemony, margins, so on CO 2: To examine the plight of the various oppressed classes around CO 3: To critically evaluate the role of hegemonic institutions in creating the marginalized CO 4: To examine the texts and understand the plight of the marginalized

Department Name:	P 200 M.S.W.
PROGRAMME OUTCOMES and PROGRAMME SPECIFIC OUTCOMES	
<p>PO1. Our graduates will demonstrate professional knowledge of Social Work They will be able to, PSO1.1 Gain understanding into the needs of individuals, families, groups and communities and design Social Work intervention strategies PSO 1.2 Understand and analyze the structure and functions of various social, economic and political institutions PSO 1.3 Understand the significance of methods of Social Work Profession</p> <p>PO2. Our graduates demonstrate value-based professionalism and volunteerism They will be able to PSO2.1 Acquire values and ethics of Social Work Profession PSO 2.2 Develop concern and commitment for marginalized sections of the society PSO 2.3 Internalize social justice, cultural pluralism and democratic participation while reaching out to marginalized</p> <p>PO3. Our graduates will demonstrate the skills to practice Professional Social Work They will be able to PSO 3.1 Develop skills of practicing methods of Social Work and addressing social problems at micro and macro levels PSO 3.2 Develop skills of programme development, management and research PSO 3.3 Develop skills of effective communication at various levels in their professional life</p>	
SEMESTER I	
Subject and code: Paper: PH201.1 - SOCIAL WORK: HISTORY AND IDEOLOGIES	
Course Outcomes:	
By the end of the course the student will be able to Understand the history and evolution of Social Work Profession both in India and in the West Differentiate between	

professional and voluntary Social Work Demonstrate the knowledge on methods of Social Work Recognize the trends in Social Work practice
Subject and code: Paper: PH 202.1 - CASE WORK PRACTICE
Course Outcomes:
By the end of the course the student will be able to Acquire proficiency in basic concepts of Social Case Work practice Obtain effective qualities to establish harmonious relationship between the client and the society Critically analyze problems of individuals and families and various determinants for human problems Obtain therapeutic knowledge and skills to work in various settings
Subject and code: Paper: PH 203.1: GROUP WORK PRACTICE
Course Outcomes:
By the end of the course the student will be able to Understand group work as a method of Social Work and its significance Display the knowledge on process, phases of group formation and will learn to identify and deal with the group dynamics Demonstrate skill of applying group work as a method of social work in social interventions
Subject and code: PH 204.1 CONCURRENT FIELDWORK PRACTICUM - I
Course Outcomes:
By the end of the course the student will be able to Understand the functioning of social welfare agencies and and analyse various facilities available for people from Government, social institutions and voluntary organ Learn the composition and needs of the community
Subject and code: Paper: PS 205.1: DYNAMICS OF HUMAN BEHAVIOUR
Course Outcomes:
By the end of the course the student will be able to Acquire a clear understanding on the concepts of human behaviour Gain a conceptual understanding into the various theories of development and its relevance. Analyse the changes throughout the life span stages and identify problems across these stages. Relate these developmental changes across the life span with real life situations.
SEMESTER II
Subject and code: Paper: PH 201.2 - COMMUNITY ORGANIZATION AND SOCIAL ACTION
Course Outcomes:
By the end of the course the student will be able to * Understand community organization and social action as a method of Social Work * Analyze the situation of subaltern groups and communities in our society * Acquire skills of using participatory strategies of community development and social action
Subject and code: Paper: PH 202.2: SOCIAL WORK RESEARCH AND STATISTICS
Course Outcomes:
By the end of the course the student will be able to Acquire knowledge of the scientific method of inquiry for the study of social phenomena Develop an understanding of the research process and basic research skills Demonstrate an understanding into the different methods of data collection and sampling. Gain knowledge of measures of central tendency, measures of dispersion, inferential

statistics and its uses in Social work Research.
Subject and code: PH 203.2 CONCURRENT FIELDWORK PRACTICUM- II
Course Outcomes:
By the end of the course the student will be able to Demonstrate the knowledge and skills of case work and group work practice and community organisation Acquire knowledge of research project and basic skills of research Learn the skills of liasoning between Government and people
Subject and code: Paper: PS 204.2: SOCIAL SCIENCES PERSPECTIVES FOR SOCIAL WORK
Course Outcomes:
By the end of the course the student will be able to Understand the concepts, structure, institutions and processes of Indian Society. Demonstrate the knowledge on divergent perspectives and necessary skills for analyzing Indian Society. Develop critical insights on the social problems and challenges confronting Indian Society. Understand and analyze economic and political systems in India and society –economy – politics linkages.
Subject and code: Paper No: PO 205.2 INDIAN SOCIAL PROBLEMS AND INTERVENTIONS
Course Outcomes:
By the end of the course the student will be able to Develop insights into the problems faced by the vulnerable section of the society Analyse the impact of social issues on the individual and the community Demonstrate knowledge and skills to mitigate the problems at an initial level Understand the role of institutional services for the welfare of people
SEMESTER III
Subject and code:Paper: PH 201.3: SOCIAL WELFARE ADMINISTRATION
Course Outcomes:
By the end of the course the student will be able to Recognize the concept of social welfare and its relevance in modern India Analyse the role of social welfare services in societal well being Understand the functioning of social welfare Organisations Identify the key elements to manage an Organisation effectively
Subject and code:PH 203.3a: CONCURRENT FIELDWORK PRACTICUM-III
Course Outcomes:
By the end of the course the student will be able to Understand the structure and dynamics of communities Identify and analyze the needs of the communities Develop skills of working with communities by applying the Social Work methods - Social Action, Social Work research and Community Organization Design and implement participatory community development modules and projects
Subject and code:Paper: PS 204.3a: TRIBAL, RURAL AND URBAN DEVELOPMENT
Course Outcomes:
By the end of the course the student will be able to Get conceptual clarity of tribal, rural and urban communities and analyse the dynamics in these communities Demonstrate in depth knowledge on challenges of tribal, rural and urban communities and analyze the intervention of Government and Non-Government Organisations Acquire skills of working with tribal, rural and urban communities applying the methods of Professional Social Work

Subject and code: Paper: PS 205.3a: CITIZEN PARTICIPATION AND LOCAL SELF-GOVERNANCE

Course Outcomes:

By the end of the course the student will be able to Recognize the key concept of citizenship, participation and governance. Develop critical understanding of the functioning of local government institutions Acquire understanding of the role of social work in promoting citizen participation in governance.

Subject and code: PH 203.3b: CONCURRENT FIELDWORK PRACTICUM - III

Course Outcomes:

By the end of the course the student will be able to

- Understand the functioning of a health setting
- Acquire skills in conducting case work (Medical /Psychiatric)
- Demonstrate skills of working with patient as well as family in the management of Patient
- Exhibit counselling skills and therapeutic treatment techniques to study and assess clients with psychological and socio-economic conditions
- Develop skills of planning and conducting health awareness programmes
- Demonstrate knowledge on documentation of interventions in health setting

Subject and code: Paper: PS 204.3b: COUNSELLING: THEORY AND PRACTICE

Course Outcomes:

By the end of the course the student will be able to

- Understand the Holistic Concept of Counselling as a tool for help
- Recognize and synthesize attitudes and values that enhance investment of Self in the Counsellors' role
- Acquire knowledge and skills of using therapeutic approaches
- Articulate the role of a Counsellor as a professional in dealing with various issues of life and to work in different settings

Subject and code: Paper: PS 205.3b: PSYCHIATRIC SOCIAL WORK

Course Outcomes:

By the end of the course the student will be able to

- Acquire knowledge on the concept of Mental disorders and Psychiatric Social work.
- Develop an understanding of the various classifications of Psychiatric disorders in children, adolescents and adults, their signs, symptoms, causes and Psycho social Interventions.
- Demonstrate knowledge and skills in the practice of Social work in Community Mental health and Rehabilitation.
- Gain knowledge on the legal provisions for Mental Health.

Subject and code: PH 203.3C: CONCURRENT FIELDWORK PRACTICUM-III

Course Outcomes:

By the end of the course the student will be able to

- Exhibit skills of dealing with human resources for Organisational Development
- Understand the working conditions and mechanisms of Human Resource Development for employee welfare.

Subject and code:PS 204.3c: HUMAN RESOURCE MANAGEMENT AND DEVELOPMENT
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Describe and analyse the role of HR Department in an Organisation • Recognize the need for employee development function • Identify the challenges faced by the Human Resource professionals and understand ways to resolve it. • Demonstrate knowledge and skills for people management
Subject and code:PS 205.3c: LABOUR LEGISLATIONS AND INDUSTRIAL RELATIONS
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Understand various Labour legislations and Industrial Relations in India • Interpret and apply relevant laws and acts in specific cases • Critically reflect on issues, limitations and challenges confronting labor laws in India • Gain Insights on labour problems and industrial relations in India and offer meaningful inputs for improvement of labour-industry relations
Subject and code:PO 206.3 - HUMAN RIGHTS AND SOCIAL DEFENCE (Open Elective)
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Define and explain the concept of human rights and recognize the rights of various marginalized sections of society • Apply human rights framework for understanding vulnerable groups • Acquire competencies of using the legal provisions and social defence systems to protect the vulnerable
SEMESTER IV
Subject and code:PS 201.4: PROJECT PLANNING AND MANAGEMENT
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Acquire knowledge and skills to facilitate participatory project management • Develop competency to facilitate process of participatory planning with varied groups. • Imbibe values and attitudes that are essential for participatory projects for development
Subject and code:PH 202.4a: CONCURRENT FIELDWORK PRACTICUM-IV
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Develop the skills of community organizer • Learn the administrative tasks • Inculcate professional values of community organizer
Subject and code:PS 203.4a: EDUCATION FOR DEVELOPMENT
Course Outcomes:
By the end of the course the student will be able to <ul style="list-style-type: none"> • Develop critical perspective on the system of formal as well as non-formal education. • Acquire skills of designing educational programmes for varied groups of

<p>disadvantaged learners</p> <ul style="list-style-type: none"> • Develop Social Work strategies in the field of education.
Subject and code:PS 204.4a CORPORATE SOCIAL RESPONSIBILITY
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> • Understand the concepts, need and functioning of CSR in India • Analyze the CSR strategies of various corporate sectors of India • Develop the skills and knowledge of managing CSR projects and socially responsible initiatives
Subject and code:PH 202.4b: CONCURRENT FIELDWORK PRACTICUM - IV
Course Outcomes:
<ul style="list-style-type: none"> • By the end of the course the student will be able to • Understand the role of Psychiatric and Medical Social Worker in a health setting • Acquire skills in conducting case assessment and diagnosis (Medical /Psychiatric) • Specific Skills in working with patient as well as family in the management of patient • Develop skills in planning and conducting health awareness programmes • Demonstrate knowledge on documentation of interventions in health setting • Exhibit knowledge on specific areas of Medical Social Work in health care settings
Subject and code: PS 203.4b: WORKING WITH CHILDREN AND FAMILIES
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> • Gain understanding into the problems of children and adolescents and need for child welfare • Demonstrate knowledge of various child welfare services, programmes, policies and legal provisions. • Develop an understanding of the family life cycle stages, identify problems across these stages and Social work interventions. • Gain insight into working with the changing families.
Subject and code:PS 204.4b: MEDICAL SOCIAL WORK
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> • Demonstrate knowledge on communication strategies for promotion of health in prevention, care and management. • Critically appraise policies, programmes and advocacy strategies of various national and inter-national organizations in the field of health and care services • Articulate personal and professional values and promote skills required to perform as valued professionals in a multidisciplinary health settings • Utilize community resources for purposes of consultation, collaboration, advocacy, referral, and networking on behalf of clients and families and reinforce the needs of clients.
Subject and code:PH 202.4C: CONCURRENT FIELDWORK PRACTICUM-IV
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> • Acquire social work knowledge and professionalism in the areas of Human Resource Development

<ul style="list-style-type: none"> Develop critical understanding on applicability of labour legislations in various organizational set-up
Subject and code:PH 202.4C: CONCURRENT FIELDWORK PRACTICUM-IV
Course Outcomes:
<ul style="list-style-type: none"> By the end of the course the student will be able to Understand the role of Psychiatric and Medical Social Worker in a health setting Acquire skills in conducting case assessment and diagnosis (Medical /Psychiatric) Specific Skills in working with patient as well as family in the management of patient Develop skills in planning and conducting health awareness programmes Demonstrate knowledge on documentation of interventions in health setting <p>Exhibit knowledge on specific areas of Medical Social Work in health care settings</p>
Subject and code:PS 203.4c: EMPLOYEE WELFARE IN INDIA
Course Outcomes:
<ul style="list-style-type: none"> By the end of the course the student will be able to Demonstrate proficiency in the concept of Employee Welfare Relate the role of Human Resource professionals in development of employee conditions Propose and implement employee welfare programmes Interpret labour laws and apply provisions for employee/organisational development
Subject and code:PS 204.4c: ORGANIZATIONAL BEHAVIOUR AND DEVELOPMENT
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> Understand the concepts and foundations of organizational behaviour Develop capacity to analyze the motivations and implications of individual and group behaviour on organizations. Demonstrate knowledge on nature of organizational set up. Critically analyze the dynamics of organizational behaviour and to reflect on the essentials of organizational development
Subject and code:PS 205.4 RESEARCH PROJECT
Course Outcomes:
<p>By the end of the course the student will be able to</p> <ul style="list-style-type: none"> Understand the nature of social science research and its distinctive characteristics Understand the requirements and components of social science research Develop a critical perspective of the subject matter in the backdrop of review of literature

Department Name:	P 300 M.B.A.
PROGRAMME OUTCOMES	
PO1: Business Acumen: To apply acquired KSA (Knowledge, Skills and Abilities) in the domain of management sciences to detect, diagnose, predict and resolve Business problems.	

PO2: Analytical and critical thinking: To adopt analytical and critical thinking for scenario analysis based decision-making.

PO3: Ethical leadership: To exhibit ethical behaviour in managerial choices as responsible corporate citizens.

PO4: Team management: To lead diverse cross-functional teams in a globalized organizational environment to optimize the welfare of stakeholders.

PO5: Ideation: To be able to generate, develop and communicate new ideas.

PO6: Catalytic Innovation: To approach social problems in an innovative way to create viable, feasible, sustainable solutions.

PO7: Ecological sustainability: To spear head environmentally responsible decisions that cater to the needs of the present without compromising the future.

PO8: Developmental alliances: To develop an association at the individual and organizational level for mutual attainment of objectives and goals.

PO9: Continual learning: To adopt experiential learning for reflection on real world situations and ensure life-long learning.

PO10: Value based education: To internalise values that promote effective learning and reinforce continuous improvement of the personal, social, moral, and economic wellbeing.

PO11: Professional development: To refine the industry readiness and agility of business professionals

PO12: Community Spirit: To engage in service oriented activities so as to empowering and benefiting social stakeholders.

PROGRAMME SPECIFIC OUTCOMES

- To nurture innovative and ethical business leaders to navigate the dynamic global environment
- To develop a culture of sustainable entrepreneurship to promote empowerment and inclusion
- To impart holistic and transformative management education to create intrinsically motivated, ethically sound, morally upright, socially conscious and competent professionals.

SEMESTER: I

Subject and code:PH 301.1 Principles of Accounting

Course Outcomes:

- To demonstrate knowledge of accounting concepts and techniques and to make sound financial and economic decisions in real world settings.
- To analyze the effect of business transactions using debits and credits.
- To evaluate financial statement and access a range of different outcomes and the ability to justify the chosen outcome.
- To identify and evaluate worksheet and closing entries for an organization.
- To evaluate the most common components of shareholders' equity.

Subject and code:PH 302.1 ORGANISATIONAL BEHAVIOUR

Course Outcomes:

- To apply the concept of organizational behavior to understand the behavior of people in the organization.
- To consider personality traits, attitude, emotion, values, learning and perception of individuals in the workplace and act accordingly to increase individual's productivity and job satisfaction.

- To apply motivation theories to analyze the performance problems.
- To demonstrate skills required for working in groups including leadership skill and manage power, politics and conflict.
- To be able to implement change effectively in an ever-dynamic organisation environment

Subject and code:PH 303.1 ECONOMICS FOR MANAGERS

Course Outcomes:

- To learn the fundamental principles of economics and their application in business decision making.
- To understand the market dynamics in a free enterprise economy.
- To study the behavior of production function in short run and long run and its impact on firms' cost of structure.
- To examine the structure of product market and its implications on the nature of competition and strategic decisions.
- To comprehend the measurement of Gross Domestic Product (GDP) and its derivatives.

Subject and code:PH 304.1 STATISTICS FOR BUSINESS DECISIONS

Course Outcomes:

- To apply statistical concepts, techniques and applications to analyses current business problems
- To analyze data using univariate and bivariate statistical tools.
- To enable optimum decision making adopting probability concepts in ambiguous managerial environment.
- To employ the appropriate statistical inferential techniques and apply it to generalize data on population
- To apply ANOVA to make inferences on more than two population data sets.

Subject and code:PH 305.1 PRINCIPLES OF STRATEGIC MANAGEMENT

Course Outcomes:

- To analyze strategy as a unique activity and to distinguish it from operational effectiveness.
- To analyze the impact of and role of external environment in the prospects of business and to develop strategies using external environment analysis.
- To conduct internal analysis of companies and to generate feasible paths to create capabilities and distinctive competencies in organizations.
- To generate and to execute corporate level, business level and functional level strategies.
- To apply recent developments in strategic management to achieve sustainable competitive advantage.

Subject and code:PH 306.1 PRINCIPLES OF MARKETING

Course Outcomes:

- Understanding and acquainting with the basic concepts of marketing management
- Understanding the components, and categorizing type and levels of product offered to the customer
- Ability in determining the pricing strategy for the product offering
- Acquainting with the concepts of distribution and its role and importance in marketing

<ul style="list-style-type: none"> • Apprising the need and importance of promotion in marketing function
Subject and code:PS 307.1 CONTEMPORARY BANKING
Course Outcomes:
<ul style="list-style-type: none"> • Incorporate the knowledge and understanding of a range of areas on Banking Technology • Awareness of the latest trends and developments in banking • Understanding of the basic terminology in Banking • Applying acquired skills and competencies to help to manage the diverse range of situations which occur in a dynamic banking environment • Reviewing the challenges of the Indian Banking Sector in the LPG era and implementing of strategic mechanism to cope with the challenges
Subject and code:PS 308.1 PRINCIPLES OF HUMAN RESOURCE MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • To Effectively manage and plan key human resource functions within organizations • To develop job description and specification and successfully accomplish human resource planning of the organization. • To be able to apply the relevant skill set which is required to address the current issues, trends, practices in Recruitment, Selection and Orientation • To develop and implement training, and development programme and design performance management system • To design compensation package and be cable to manage industrial relations.
Subject and code:PS 309.1 MANAGEMENT DATA ANALYTICS
Course Outcomes:
<ul style="list-style-type: none"> • To apply principles and skills of economics, marketing, and decision making to contexts and environments in data science • To build and enhance business intelligence capabilities by adapting the appropriate technology and software solutions • To acquire the ERP concepts for real world applications • To understand Data Warehouse fundamentals and Data Mining principles • To communicate effectively using Data Visualization with MS Excel
Subject and code:PS 310.1 EXECUTIVE COMMUNICATION
Course Outcomes:
<ul style="list-style-type: none"> • To develop strategies for improving organizational communication • To effectively use verbal and non-verbal communication in business discourse • To compose business messages by using appropriate formats of messages • To formulate strategies for writing appropriate letters for various purposes • To prepare a professional resume and cover letter
Subject and code:PS 311.1 SOCIAL MARKETING
Course Outcomes:
<p>To internalize the basic concept of and need for social marketing</p> <p>To transform into practice-ready social marketers ready to juxtapose and carry along social marketing and corporate marketing objectives harmoniously</p> <p>To apply the systematic and comprehensive framework of social marketing</p> <p>To bring into effect the influential new 3Cs model (Containment, Counter-Marketing, and Critical Capacity Building)</p> <p>To embody the spirit of social marketing which involves the application of marketing</p>

techniques to social ends

SEMESTER II

Subject and code:PH 301.2 OPERATIONS MANAGEMENT

Course Outcomes:

- To formulate the input–process–output framework and apply it to a wide range of operations
- To identify the elements of operations management and various transformation processes to enhance productivity and competitiveness
- To analyze and design the work systems by calculating the basic, allowed and standard time and also be able to identify and efficiently manage bottlenecks.
- To apply different forecasting models/techniques both quantitative and qualitative
- To analyze and evaluate various facility alternatives and their capacity decisions, develop a balanced line of production & scheduling and sequencing techniques in operation environments.

Subject and code:PH 302.2 INTERNATIONAL BUSINESS ENVIRONMENT

Course Outcomes:

- To identify the development of pattern of international trade with the help of trade theories
- To analyse the role of globalisation in modern times and to evaluate the multilateral agreements while framing global business strategies
- To design internationalisation strategies for firms and to utilise the benefits of expansion of firms in foreign markets especially emerging markets
- To analyse international business environment evaluating various cultural, social, economic and demographic elements and to design business tactics according to market dynamics.
- To identify the various means for international investment and to appraise the significance of each with the help of various theories.

Subject and code:PH 303.2 BUSINESS RESEARCH METHODOLOGY

Course Outcomes:

- To apply research and knowledge acquired in business decisions.
- To critically evaluate secondary data and apply it for optimum business decision making.
- To apply knowledge of research process and practices to assess business environment and solve business problems.
- To apply survey research concepts, methods and techniques in modern day research problem.
- To draft research proposals, report with citation techniques.

Subject and code:PH 304.2 BUSINESS LAW

Course Outcomes:

- To develop a practical understanding of the basic concepts of those laws which regulate businesses
- To apply legal ideas, principles and concepts understood earlier through concrete business case law
- To recognize the linkages between law and other fields like marketing, finance, economics and information systems

- To apply the basic principles of Contract Law and Company Law in business
- To foresee the impact of relevant economic laws and laws relating to intellectual property

Subject and code:PH 305.2 COST AND MANAGEMENT ACCOUNTING

Course Outcomes:

- To apply both conventional and emerging concepts to facilitate managerial decision making.
- To assess the impact of costing methods on valuation of stock and net profit.
- To adopt the cost volume profit analysis for short- and long-term decision making.
- To formulate master budget and functional budgets for organizational planning and control purposes.
- To measure the deviations that arise in organizations as compared to the standards set and take corrective action.

Subject and code:PH 306.2 ENTREPRENEURSHIP MANAGEMENT

Course Outcomes:

- To develop the spirit of entrepreneurship among the young management graduates and contribute towards the Economic Development
- To develop next generation innovators, intrapreneurs, entrepreneurs and change-makers
- To direct the budding entrepreneurs to start up their own venture following the legal formalities and be equipped with the required capital.
- To formulate and present the business plans in a professional manner to all the stakeholders.
- To be able to effectively manage the various stages of growth of an entrepreneurial firm

Subject and code:PS 307.2 CORPORATE FINANCIAL MANAGEMENT

Course Outcomes:

- To apply theoretical framework for considering corporate finance problems, and issues.
- To review the impact of allocation, management and funding of financial resources.
- To assess risk and return based on the given scenario.
- To evaluate the financial objectives of various types of organizations and the requirements of all the stakeholders
- To assess the sources of corporate finance which lead to optimal capital structure decisions

Subject and code:PS 308.2 LEADERSHIP IN BUSINESS ORGANISATIONS

Course Outcomes:

- To synthesize leadership development through application of theoretical knowledge.
- To Identify and develop traits and characteristics essential for leadership development.
- To appraise the application of charismatic and transformational leadership styles in the contemporary business organizations.
- To measure implementation of contingency theories of leadership in varying business conditions.

<ul style="list-style-type: none"> • To justify ethical leadership in contemporary business organizations.
Subject and code:PS 309.2 SERVICES MARKETING
Course Outcomes:
<ul style="list-style-type: none"> • Successfully navigate the challenges of services marketing and develop distinct strategies and tactics more attuned to services • To develop strong customer relationships through service quality to organizations whose core product is service and to organizations that depend on service excellence for competitive advantage • To apply frameworks for customer focussed management and increase customer satisfaction and retention through service quality • To successfully implement service strategies for competitive advantage across industries • To generate the service advantage by measuring and managing service quality enabling cocreation and cross functional treatment of issues through integration of marketing with other domains in the organization
Subject and code:PS 310.2 ECONOMETRIC ANALYSIS
Course Outcomes:
<ul style="list-style-type: none"> • To translate business problems into formal testable hypothesis within regression model • To construct linear regression equations to model business decision making problems • To draw inference from estimated regression results • To identify and develop solutions to the problems that results from violating the assumptions of classical regression model • To estimate and validate linear regression models using E-Views, STATA and R
Subject and code:PS 311.2 SYSTEMS THINKING FOR MANAGERS
Course Outcomes:
<ul style="list-style-type: none"> • To provide a better understanding of the significance of Systems Thinking in the current business context. • To analyse the basic systems laws of Systems Thinking. • To provide detailed information on the basic archetypes or templates of Systems Thinking and its applications in solving managerial problems.
SEMESTER III
Subject and code:PH 301.3 BUSINESS ETHICS
Course Outcomes:
<ul style="list-style-type: none"> • To inculcate a sense of ethical values and ethical behaviour at personal, professional and corporate governance level. • To Understand Human Person as unique and a foundation for any ethical issues. • Distinguish the ethical and unethical issues and practices in the marketing management and Human Resource Management of a firm. • Examine the implications of issues and unethical practices in the area of finance and accounts. • To examine the implications of issues and unethical practices in the area of Environment and Technological Development.
Subject and code:PH 302(a).3 LOGISTICS AND SUPPLY CHAIN MANAGEMENT
Course Outcomes:

- Acquainting with the basic concepts, processes, and scope and key elements of a supply chain.
- Apprising role, functions, strategies and decision making in Warehousing function
- To develop the understanding of classification, role, policies and costs in Inventory management
- Analyzing and applying the structure, logistical program and make decisions in designing of distribution channel
- Exploring the developments taking place in the field of logistics and supply chain

Subject and code:PH 302(b).3 CREATIVITY AND INNOVATION MANAGEMENT

Course Outcomes:

- Identifying the role of Industrial Revolution 4.0 and Innovation in designing Sustainable Development practices.
- Apprising the role of Creativity, Innovation and Imagination in Experience engineering.
- Understand the role of different types of innovations to respond to the agile business environment.
- Interpreting and practicing the pattern of Innovation with the help of various models of innovation.
- Designing the right customer solutions and to create customer value propositions using design thinking and to generate innovative ideas for social change

Subject and code:PS 303(a).3 INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

Course Outcomes:

- Become informed, independent and ethical investors in various financial instruments.
- Find attractive career as advocates of capital markets, investment advisers and portfolio managers.
- Grow as campaigners of investor's awareness programs and make more and more knowledgeable investing community.
- Fashion as crusaders against the financial market fraudsters and safeguard the investors' interest.
- Become champions in new financial products development.

Subject and code:PS 303(b).3 SHORT TERM DECISION MAKING IN FINANCE

Course Outcomes:

- Underling the management of current assets and current liabilities
- Evaluating the ability of a firm to continue its operations
- Comprehending the capacity of a firm to meet its maturing short-term debt and upcoming operational expenses.
- Assessing the various components of working capital
- Determining factors that affect firm's liquidity, risk and shareholder wealth.

Subject and code:PS 303(c).3 INTERNATIONAL FINANCIAL MANAGEMENT

Course Outcomes:

- To demonstrate basic understanding of the global business environment and the international monetary system
- To compute the Balance of Payments and evaluate various aspects of capital account liberalization.
- To demonstrate the significance of various market participants and components of

the international financial markets.

- To forecast exchange rates based on the parity conditions that should apply between spot rates, forward rates, inflation rates, and interest rates.
- To demonstrate how international capital budgeting can be applied to determine whether an international project should be implemented.

Subject and code:PS 303(d).3 MERCHANT BANKING AND FINANCIAL SERVICES

Course Outcomes:

- Articulating the significant role played by Financial Services sector in the realm of Economic Development of a Country.
- Deliberate on the prominent components of the financial sector providing specialized services
- Illustrate specialized knowledge in existing and emerging areas of the Financial Services.
- Enhance the technical knowhow of the Banking and Financial market.
- Understanding of how credit rating and its regulatory framework functions.

Subject and code:PS 304(a).3 INDUSTRIAL RELATIONS

Course Outcomes:

- Successfully navigate the challenges of managing all aspects of work and employment between the parties to an employment contract
- To develop strong skills in resolving issues relating to people as groups/collectives vis a vis management in unionized and in non-unionized situations
- To apply frameworks for managing conflict in the industry including techniques like arbitration, mediation and conciliation
- To successfully implement human resource management strategies for successfully managing industrial relations which in turn will influence and affect the performance of organizations
- To generate the human capital advantage by being mature business personnel who recognize and understand the need for labour to collectivise in India even in the era of the fourth industrial revolution

Subject and code:PS 304(b).3 ORGANISATIONAL CHANGE AND DEVELOPMENT

Course Outcomes:

- To implement change successfully in an organization
- To apply the concept of organizational renewal in the workplace in order to create an agile organization.
- To act as an Organization Development practitioner and design various Organization development interventions.
- To align organization culture and structure with the change and development strategy of the organization.
- To use Information Technology effectively in organizational design

Subject and code: PS 304(c).3 TALENT MANAGEMENT

Course Outcomes:

- To assess the role of Talent management in achieving organizational objectives and to design a Talent Management system
- To evaluate the role of Talent management in the current volatile environment using various Talent management models

- To build an effective employer brand with the help of employee value proposition and to attract the best talent with the employer brand
- To develop suitable Talent development strategies using potential identification, executive development programs and Talent pipeline management strategies
- To design the right Talent retention strategy with the help of employee engagement initiatives and to align Talent strategy to business strategy

Subject and code:PS 304(d).3 INTERNATIONAL AND STRATEGIC HUMAN RESOURCE MANAGEMENT

Course Outcomes:

- Develop understanding to manage human resources in the global context.
- Involving in recruiting, selection and training the staff for international assignments
- Actively participating in designing and developing of international performance management & compensation system
- Becoming instrumental in aligning HR Strategy to the Organizational Strategy
- Involve in strategizing the HR process

Subject and code:PS 305(a).3 SALES AND DISTRIBUTION MANAGEMENT

Course Outcomes:

- To propose emerging functions of sales management in modern business organizations.
- To plan personal selling strategies for successful salesmanship activities.
- To design the functions for selecting and retaining efficient salesmen for the sales organization.
- To defend the role of distribution management in creating place and time utility.
- To revise the activities of intermediaries in delivering value for customers in the modern business scenario.

Subject and code:PS 305(b).3 RURAL MARKETING

Course Outcomes:

- Awareness creation about Indian rural market
- Understanding the consumer behavior and decision making process in rural markets
- Understanding and application of the marketing mix practiced in the rural market
- Sensitizing the need of innovative distribution system required in the rural market
- Apprising the need of innovative research techniques to understand the rural market better

Subject and code:PS 305(c).3 STRATEGIC BRAND MANAGEMENT

Course Outcomes:

- To gain valuable perspectives on the challenges in creating and nurturing strong brands.
- To provide managers with concepts and techniques to improve the long term profitability of their brand strategies
- To combine a comprehensive theoretical foundation with enough practical insights to assist them in their day to day and long term brand decisions
- To create profitable brand strategies by building, measuring and managing brand equity.
- To recognise the effects of their day to day marketing decisions on brand

performance
Subject and code: PS 305(d).3 CONSUMER BEHAVIOUR
Course Outcomes:
<ul style="list-style-type: none"> • To develop appropriate marketing strategies by applying the knowledge of consumer behavior in segmenting markets. • To apply personality traits and consumer perceptions in positioning products and predicting buyer behavior. • To strategize entry into new market segments and devise strategies for customer retention based on formation of customer attitudes and to apply attitude changing models to attract/ woo competitor's loyals to switch. • To attract global markets by penetrating the products based on social, economic and cultural dimensions. • To prepare plans/policies relating to corporate social responsibility and pave the way for ethical conduct of business.
Subject and code:PS 306(a).3 FACILITY LOCATION AND PROCESS DESIGN
Course Outcomes:
<ul style="list-style-type: none"> • Enhanced understanding of facility location and layout decisions • Comprehensive knowledge of factors affecting facility location and layout decisions • Strategize on best possible process to implement based upon product profile of the Organization. • Implement and evaluate process flow based on product attribute and process competencies. • Insight of operations process design-selection of equipment and technology.
Subject and code:PS 306(b).3 INVENTORY AND WAREHOUSE MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • Articulate knowledge of inventory systems its valuations, decision and control techniques used in inventory management. • Develop and manage effective and efficient warehouse management system. • Understanding of relationship between warehousing, inventories and supply chain planning. • Effect of managerial decisions in functional area of Warehouse management. • Implement feasible, effective and efficient warehousing system in retail setup.
Subject and code:PS 306(c).3 MATERIALS AND PROCUREMENT MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • Understand elementary idea of material management linkages with other areas of management, supply chain management and production processes. • Critique successful supply chain management practices. • Integrate a biblical worldview within the context of material management. • Deliberate the role of materials mmanagement in other areas of management functions.
Subject and code:PS 306(d).3 SERVICE OPERATIONS MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • Getting acquainted to the nature, classification, framework and delivery systems of services • Evaluating criteria for site selection for service industry

- Understanding the concept of yield management and its importance and application to the service industry
- Analyzing and applying Inventory management in service industry
- Apprising digital application in service sector

Subject and code:PS 307(a).3 FINANCIAL MODELING

Course Outcomes:

- To perform accurate financial calculations with the help of packages like MS Excel and R.
- To create interactive financial models which help in quick decision making.
- To scrutinize the dividend payment pattern of the corporations and their implications.
- To construct the financial statements and to predict the future financial positions of the companies.
- To analyze the implications of corporate events on the share prices and to take informed investment decisions.

Subject and code:PS 307(b).3 PEOPLE ANALYTICS

Course Outcomes:

- To enable to make data-driven decisions to attract, manage, and retain employees
- To effectively manage the challenges involved in implementing analytics
- To develop data driven, proactive workforce planning and take appropriate workforce-related decisions.
- To use the talent sourcing analytics, talent acquisition analytics and predictive analytics for making HR decisions.
- To apply analytics in onboarding and performance management system.

Subject and code:PS 307(c).3 DATA DRIVEN MARKETING

Course Outcomes:

- To conduct descriptive marketing analysis using excel
- To predict market swings based on price fluctuations
- To forecast sales adopting various statistical forecasting tools
- To estimate life time customer value and allocation of resources for customer acquisition and retention
- To segment markets and predict duration of future sales

Subject and code:PS 307(d).3 FORECASTING ANALYTICS

Course Outcomes:

- To disentangle the components of time series data
- To construct data driven models of forecasting, such as naïve models, moving average models and exponential smoothing models
- To build and validate stationary time series models
- To apply multivariate and volatility models for forecasting, such as VAR, Granger
- Causality, ARCH and GARCH Models
- To construct and evaluate time series models using E-Views/R

SEMESTER IV

Subject and code:PH 301.4 CORPORATE GOVERNANCE

Course Outcomes:

- To interpret the fundamental concepts and issues in corporate governance in

conjunction with the current Indian business scenario.

- To appraise the theories and models of corporate governance applied in business organizations across the world.
- To review the application of committee recommendations in business organizations in India.
- To Justify the role of boards and committees in the healthy governance of business organizations.
- To predict the future of corporate governance and plan best practices for the future.

Subject and code: PH 302(a).4 DECISION MAKING MODELS

Course Outcomes:

- To apply Linear Programming Models and Transportation Problems for tackling business environment challenges quantitatively to allocate limited resources.
- To employ the Decision Theory techniques to analyze current business problems under risk certainty and uncertainty.
- To apply the Replacement Models techniques in planning of replacing of items keeping cost considerations.
- To apply Network Modelling of activities to ensure optimum utilization of human and other resources like time and cost.
- To employ simulation tools for real world business problems where mathematical modeling may not be applied and make strategic decisions

Subject and code:PH 302(b).4 KNOWLEDGE MANAGEMENT

Course Outcomes:

- To be able to relate the concepts of knowledge management to the real world.
- To apply complex theories of knowledge management to a wide range of scenarios;
- To exhibit the skills and competences to work as an effective knowledge managers and knowledge workers in a knowledge-based organization.
- To use the effective tools for knowledge transfer and sharing.
- To be able align organizational culture in knowledge application.
- To implement various KM strategies and metrics for the success of knowledge management.
- To lead knowledge knowledge-based organization from ethical, and legal perspective

Subject and code:PH 303.4 SUMMER INTERNSHIP PROJECT

Course Outcomes:

- To use the effective tools for knowledge transfer and sharing.
 - To be able align organizational culture in knowledge application.
 - To implement various KM strategies and metrics for the success of knowledge management.
- To lead knowledge knowledge-based organization from ethical, and legal perspective

Subject and code: PS 304(a).4 FINANCIAL REPORTING AND ANALYSIS

Course Outcomes:

- Evaluate different types of performance measurement systems in accounting and commonly used financial control systems.
- Interpret financial statement based on different techniques of analysis.

- Design appropriate business policies and strategies to meet stakeholder and shareholder needs in the light of the recent changes in financial reporting.
- Create, evaluate financial statement and access a range of different outcomes and the ability to justify the chosen outcome.
- Estimate the future financial outcomes for a company based on forecaster's own assumptions and beliefs.

Subject and code: PS 304(b).4 TAXATION FOR MANAGERS

Course Outcomes:

- Expose students to real life situations involving taxation and to equip them with techniques for taking tax-sensitive decisions.
- Assess the value of goods and services for payment of GST.
- Exhibit a clear understanding of various provisions of GST system and utilisation of input tax credit.
- Demonstrate the ability to draw meaningful conclusions about tax compliance of individuals, business firms and companies.
- Advise on valuation of goods for payment of customs duty.

Subject and code: PS 304 (c).4 PROJECT FINANCING AND APPRAISAL

Course Outcomes:

- Comprehend the conceptual clarity about project organization and feasibility analyses -Market, Technical, Financial and Economic.
- Analyse and understand the techniques for Project planning, scheduling and Execution Control.
- Apply the risk management plan and analyse the role of stakeholders.
- Apprehend Project Procurement, generation and screening of project ideas to excel in the industry.
- Analyse the prerequisites for successful Project Implementation considering the human perspectives for the benefit of the society at large.

Subject and code: PS 304(d).4 DERIVATIVES AND RISK MANAGEMENT

Course Outcomes:

- To enhance the investment basket by including the various financial derivative products.
- To become independent investor/trader in the derivatives market.
- To apply the derivative trading strategies to hedge the positions against risk.
- To face the practical challenges in the application of derivative instruments.
- To formulate alternative trading strategies to the conventional strategies.

Subject and code: PS 305(a).4 TRAINING AND DEVELOPMENT

Course Outcomes:

- Attain basic concepts of training and development and its process
- Assimilate best of all the components of training and development and familiarize it.
- Gain a deeper understanding of the tools and techniques of the training process.
- Familiarize training strategy with corporate strategy.
- Learn new approaches to the training programme in a changed environment.

Subject and code: PS 305(b).4 LABOUR LAW

Course Outcomes:

- To examine the constitutional provisions of Labour Legislations and to incorporate

the newly introduced labour codes in the work place

- To assess the various challenges faced by trade unions and to evaluate the various provisions of Trade unions Act, 1926 and to examine the various statutory requirements of Industrial Disputes Act, 1947.
- To analyse and to incorporate the different provisions of Factories Act, 1948.
- To assess the various statutory requirements as specified by wage legislations and to critically analyse different wage legislations
- To evaluate social security as a human right and to apply the various provisions of Social Security legislations in the work place

Subject and code: PS 305(c).4 STAFFING AND COMPENSATION MANAGEMENT

Course Outcomes:

- To implement effective staffing system and strategy in the organization
- To be able to manage staffing activities in the workplace.
- To apply the concept of compensation and reward management in firms
- To administer wage and salary system effectively.
- To practice performance-based reward system in the organization setting.

Subject and code: PS 305(d).4 PUBLIC RELATIONS

Course Outcomes:

- To demonstrate an understanding of the public relations practice.
- To practice public relations based on the theoretical foundation.
- To use Media and Communication in Public Relations activities.
- To recognize the importance of community relations in building public relations.
- To manage crisis situation with effective public relations practice.

Subject and code: PS 306(a).4 ADVERTISING MANAGEMENT

Course Outcomes:

- To gain valuable perspectives on the internal and external environmental challenges involved in managing and integrating a firms marketing communication
- To provide managers with concepts and techniques to conceptualise and execute creative advertising in various media
- To combine a comprehensive theoretical foundation with enough practical insights to assist them in practical communication management
- To expertly optimise the use of all major marketing communication tools like sales promotion, direct marketing, public relations and publicity.
- To create profitable marketing communication strategies by optimising media planning and putting creative ideas to the test of fixed budgets and defined objectives through the process of evaluation

Subject and code: PS 306(b).4 NEW PRODUCT DEVELOPMENT

Course Outcomes:

- Understanding the strategic importance, classification and hierarchy of products
- Involving in the nuances of concept generation and evaluation in the new product development process
- Involving in the process of evaluation and selection of concepts in new product development process
- Acquainting with the process of product development, design and team management in the NPD process
- Recognizing the importance of product testing and commercialization phase in the

NPD process
Subject and code:306(c).4 RETAIL MANAGEMENT AND VISUAL MERCHANDISING
Course Outcomes:
<ul style="list-style-type: none"> • To plan retail operations most effectively and efficiently in contrast with the core retail concepts. • To design effective retailing strategies based on consumer needs and market changes. • To formulate most effective pricing strategies to drive customers to retail organizations. • To recommend the best solution for effective customer servicing and enhance customer satisfaction for a retail organization. • To design most appropriate visual merchandising for retail organization based on the nature of the store and type of product offered.
Subject and code:PS 306(d).4 DIGITAL MARKETING
Course Outcomes:
<ul style="list-style-type: none"> • Acknowledging the impact of digital movement in the present marketing scenario • Understanding the social media impact in the present marketing scenario • Acquainting with the drivers in the social marketing domain • Enabling to adopt and experiment with the online tools for marketing function • Apprising the developments in digital domain and impacts on the marketing domain
Subject and code:PS 307(a).4 OPERATIONS ANALYTICS
Course Outcomes:
<ul style="list-style-type: none"> • Development of analytical and problem solving skills, confidence to use tools, ability to visualize data and infer decisions. • Develop a multi-dimensional approach to problem solving/decision making • Exposure to practical analysis tools in decision making and problem solving in operations • Model future demand uncertainties, to predict the outcomes of competing policy choices and to choose the best course of action in the face of risk. • Find an attractive career in the area of operations analytics.
Subject and code:PS 307(b).4 PURCHASE MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • Comprehensive understanding of process of the purchase management and practical aspects involved in it. • Find an attractive career in purchase division of the well-known business houses • Become an expert consultant in the area of purchase and procurement. • Develop modern and customized purchase system and help the corporates to achieve greater efficiency in purchasing. • Emerge as an expert negotiator between the corporate buyers and sellers.
Subject and code:PS 307(c).4 STRATEGIC OPERATIONS MANAGEMENT
Course Outcomes:
<ul style="list-style-type: none"> • Understanding the the importance of strategic operations management. • Understanding the scope of operations management to gain competitive advantage. • Building step by step operations strategy.

- Implementing the strategic operations strategies to meet the objectives of the firm.

Subject and code:PS 307(d).4 TOTAL QUALITY MANAGEMENT

Course Outcomes:

- To achieve the objectives of quality control by understanding the need for total quality management.
- To implement and use the theories developed by the various philosophers in creating customer focus and achieving customer satisfaction.
- To apply various statistical tools to measure quality and to analyze the quality-cost relationship.
- To be able to measure customer satisfaction by the use of the Kano Model and Teboul Model.
- To identify and analyze the cost of benchmarking and to utilize the tools of concurrent engineering in total quality management.

Subject and code:PS 307 (e).4 PROJECT FINANCING AND APPRAISAL

Course Outcomes:

- Comprehend the conceptual clarity about project organization and feasibility analyses -Market, Technical, Financial and Economic.
- Analyse and understand the techniques for Project planning, scheduling and Execution Control.
- Apply the risk management plan and analyse the role of stakeholders.
- Apprehend Project Procurement, generation and screening of project ideas to excel in the industry.
- Analyse the prerequisites for successful Project Implementation considering the human perspectives for the benefit of the society at large.

Subject and code:PS 308(a).4 FINANCIAL ANALYTICS

Course Outcomes:

- To become expert in different software packages in technical analysis and to guide others.
- To inculcate the problem solving ability whenever need arises in the area investment management.
- To become self-reliant investors and traders in financial products.
- To obtain an attractive career in the field of investment analysis.
- To create awareness among the investing community about the fraudulent investment tips providers.

Subject and code:PS 308(b).4 TALENT ANALYTICS

Course Outcomes:

- To measure talent engagement and make a strong organizational culture to improve performance
- To enable the students with the technique of predicting the attrition rate using analytics
- To leverage big data to significantly improve the value of the workforce.
- To optimize employee wellness, health and workplace with predictive analytics
- To be competent to handle the future demands of talent analytics

Subject and code:PS 308(c).3 MARKETING ANALYTICS

Course Outcomes:

<ul style="list-style-type: none"> • To acquaint the learner with concepts and tools of Marketing Analytics • To understand how data needs to be analyzed for providing meaningful directions or insights to marketing problems
Subject and code:PS 308(d).4: DATA VISUALIZATION
Course Outcomes:
<ul style="list-style-type: none"> • To transform data into interactive visual reports and dashboards • To identify appropriate data visualization techniques given particular requirements imposed by the data • To prepare data and to create and manage relationship for visual analytics • To construct compelling visualizations using Power BI and Tableau

Department Name:	P 310 M.Com.
PROGRAMME OUTCOMES	
PO1: Apply knowledge of management theories and practices to solve contemporary and complex business problems.	
PO2: Ability to lead themselves and others in the achievement of businessgoals through value-based leadership skills	
PO3: Ability to analyse and communicate global, economic, financial, legal,and ethical aspects of business.	
PO4: Understand the values of life-long learning.	
PO5: Ability to work in a team of core competence or multidisciplinaryteams.	
PROGRAMME SPECIFIC OUTCOMES	
PSO 1: Develop entrepreneurial skills through effective Industry Institute Interactions.	
PSO 2: Qualify in various competitive examinations related to career growth and succeed in procuring best opportunities in the corporate and academia	
Semester I	
Subject and code: PH 311.1 Accounting Theory and Practice	
Course Outcomes:	
Evaluate the notions & ideas of thought that have shaped a theoretical basis for accounting.	
<ul style="list-style-type: none"> •Examine the relationship between accounting theory and practice. •Examine the role of Conceptual framework in the standard setting process. •Apply critical thinking by identifying and analyzing accounting issues using relevant accounting frameworks. •Prepare Financial Statements in accordance with appropriate standards. 	
Subject and code: PH 312.1 Financial Management and Policy	
Course Outcomes:	
<ul style="list-style-type: none"> • Demonstrate the applicability of the concept of Financial Management to understand the managerial Decisions and Corporate Capital Structure. • Familiarize with cost of capital and capital structure to support managerial decisions. • Apply the Leverage and EBIT EPS Analysis associate with Financial Data in the corporate. • Analyse the complexities associated with management of cost of funds in the 	

capital Structure.
Subject and code: PH 313.1 Income Tax
Course Outcomes:
<ul style="list-style-type: none"> • Acquire profound clarity on concepts pertaining to personal tax. • Understand relevance of investments to be made for better tax planning. • Recognize the modes of tax planning with respect to chosen occupation. • Inculcate decision making power in managing investments with regard to tax. • Decide on Investment gestation based on tax policies of the country.
Subject and code: PS 314.1 Economic Environment and Policy
Course Outcomes:
<ul style="list-style-type: none"> • Recognize the state of any given economy based on sovereign characteristics. • Identify the modes of channelizing capital into the economy. • Understand, analyze and recommend policies for better economic framework. • Conceptual clarity on legal rights of individuals as citizens of the country pertaining to business.
Subject and code: PS 315.1 Corporate Law, Ethics and Governance
Course Outcomes:
<ul style="list-style-type: none"> • Acquaint with the knowledge of corporate law and its administration in India. • Recognize the inherent conflict of interest in many business decisions and Demonstrate an understanding of common ethical problems in businesses. • Demonstrate a critical appreciation of the growing importance of corporate social responsibility and how it relates to corporate strategy. • Critically evaluate the concepts and committees of corporate governance.
Subject and code: PS 316.1 - Quantitative Techniques for Decision Making
Course Outcomes:
<ul style="list-style-type: none"> • Understand managerial decision-making processes in organizations and appreciate the use of various quantitative techniques in making decision; • Apply quantitative techniques to solve a variety of business problems • Comprehend the concept of a Transportation Model and develop the initial solution for the same;
Subject and code: PS 317.1 Working Capital Management
Course Outcomes:
<ul style="list-style-type: none"> • Analyse working capital management policies and their impact on the firm's profitability, liquidity and operating flexibility. • Understand the importance of working capital management and its role in meeting the firm's strategic objectives and value creation.
Semester II
Subject and code: PH 311.2 Corporate Accounting and Reporting
Course Outcomes:
<ul style="list-style-type: none"> • Build a solid foundation in accounting and reporting requirements. • Develop comprehensive understanding of the advanced issues in accounting for assets, liabilities and owner's equity. • Account for a range of advanced financial accounting issues. • Prepare the accounts of companies undergoing amalgamation & external reconstruction.

<ul style="list-style-type: none"> • Prepare consolidated accounts for a corporate group. • Analyse the various issues & problems related to published financial statements.
Subject and code: PH 312.2 Corporate Financing and Investment Decisions
Course Outcomes:
<ul style="list-style-type: none"> • Calculate the yearly cash flows of different types of capital budgeting project and evaluate how the choice of depreciation method affects the cashflows • Apply several capital budgeting techniques appreciating the strengths and weaknesses of the different techniques • Understand how to incorporate risk and uncertainty into capital budgeting decisions • Assess the factors affecting international investment decisions and opportunities presented to an organisation • Evaluate alternative sources of financing options and investment opportunities and their suitability in particular circumstances
Subject and code: PS 313.2 Business Taxation
Course Outcomes:
<ul style="list-style-type: none"> • Acquire conceptual clarity in the model of GST. • Have sound knowledge on technical jargons in relation to the tax system. • Understand the channel of working of dual GST system. • Make the best advantage of the tax prospects provided through GST regime. • Have profound knowledge on Customs Act and the modes of assessment.
Subject and code: PS 314.2 Business Statistics
Course Outcomes:
<ul style="list-style-type: none"> • Understand data and draw inference from data • Calculate and interpret statistical values by using statistical tool (correlation & regression) • Demonstrate an ability to apply various statistical tool to solve business problems
Subject and code: PS 315.2 Research Methodology and Ethics
Course Outcomes:
<ul style="list-style-type: none"> • Identify research output with philosophical base and greater relevance to the society • Undertake quality research with scientific methodology • Produce good Research Reports • Undertake original Research following ethical guidelines and practices in conducting the research and publication of papers.
Subject and code:PS 316.2 E-Business
Course Outcomes:
<ul style="list-style-type: none"> • Able to understand concepts of E-Commerce and E- business • Analyze different types of portal technologies commonly used in the industry. • Integrate theoretical frameworks with business strategies.
Subject and code:PS 317.2 Internship
Course Outcomes:
<ul style="list-style-type: none"> • Exposure to the industrial/business world to get practical experience in the day to day affairs of the business enterprises • Practical application of the theoretical knowledge of the students in the field of

<p>accounting, costing, taxation, human resource, finance, marketing and management</p> <ul style="list-style-type: none"> • Studying the office environment, experiencing the day to day business decisions, superior- subordinate relationship and experiencing the work life • Learning entrepreneurial skills and understanding issues and challenges of entrepreneurship
Subject and code: PO 318.2 Personal Finance and Investment Planning
Course Outcomes:
<ul style="list-style-type: none"> • Identify the major types of investment alternatives. • Describe how safety, risk, income, growth, and liquidity affect your investment decisions. • Figure out the future value of money using future value charts.
Subject and code: PS 356.2 E-Business
Course Outcomes:
<p>CO 1: Summarise the fundamentals of entrepreneurship with its role in economic development and to motivate them towards E-business activities.</p> <p>CO 2: Use the concept of entrepreneurial leadership and stimulate them to think innovative as entrepreneurs to implement in E-business</p> <p>CO 3: Assess technologies and business points of view to show the business cases that are viable right now.</p> <p>CO 4: Develops an understanding of transacting electronically and emerging technology for the same</p> <p>CO 5: Design business entity in the light of the legal and regulatory framework in India.</p>
Semester III
Subject and code: PH 351.3 Equity Research and Security Market Operation
Course Outcomes:
<p>CO 1: To understand the concept of Equity Research and acquaint with the thorough knowledge of fundamental analysis.</p> <p>CO 2: To study different tools of analysis of company performance.</p> <p>CO 3: To understand the workings of Capital Market in India.</p> <p>CO 4: To familiarize with recent development in the area of primary and secondary market.</p> <p>CO 5: To be able to analyse and apply technical methods in stock trading</p>
Subject and code: PH 352.3 Mergers, Acquisitions and Corporate Restructuring
Course Outcomes:
<p>CO 1: To focus on the questions concerning motivations for mergers and empirical evidence related to those motivations.</p> <p>CO 2: To provide an analytical framework for evaluating the strategic and financial impact of M&A's on corporations and their stakeholders.</p> <p>CO 3: To have a basic understanding on different forms of corporate restructuring.</p> <p>CO 4: To study various forms of takeover tactics and defenses.</p> <p>CO 5: To examine the regulatory framework of M&As.</p> <p>CO 6: To present a critical examination and analysis of due diligence and integration.</p>
Subject and code: PH 353.3 Investment Banking and Financial Services
Course Outcomes:

- CO 1: Explain the basic concepts and activities under investment banking and financial services
- CO 2: Compare and contrast commercial banking, investment banking and merchant banking
- CO 3: Evaluate the concepts under issue management and private equity
- CO 4: Analyse the importance and workings of Underwriting, leasing and forfeiting in real business operations.
- CO 5: Critically evaluate the importance and workings of credit rating institutions, depository systems and other financial institutions

Subject and code: PS 354.3P Data Analysis using SPSS

Course Outcomes:

- Co 1 :Students will get to know the use of Statistical Package for the Social Sciences (SPSS), user-friendly software in social science research.
- Co 2 : Students will understand the application of SPSS in solving research problems

Subject and code: PS 355.3 Corporate Tax Planning

Course Outcomes:

- CO 1: Identify the difference between Tax Evasion, Tax Planning and Tax Avoidance.
- CO 2: Analyse various deductions, rebates and reliefs to reduce the taxable income and tax liability of companies
- CO 3: Asses tax aspects of Transfer pricing
- CO 4: Discuss the application of Deductions and Collection of Tax at Source for Corporate
- CO 5: Summarize Double Taxation Avoidance Agreement.
- CO 6: Demonstrate tax planning in respect of corporate reorganization

Subject and code: PS356.3 Insurance and Risk Management

Course Outcomes:

- CO 1: Discuss the risk identification and measurement.
- CO 2: Describe the various concepts under insurance
- CO 3: Examine the operations of insurance companies
- CO 4: Analyse the concept of insurance premium and financial statements of insurance companies
- CO 5: Summarize the regulatory aspects of insurance

Subject and code: PO 357.3 - Corporate Culture and Ethics

Course Outcomes:

- CO 1: Describe the nature and scope of ethics, contrast between the ethics and moral, personal ethics and professional/business ethics
- CO 2: Evaluate the conflict of interest and ethical dilemma and measures to mitigate unethical practices in various fields
- CO 3: Examine the impact of corporate culture on ethics.
- CO 4: Identify the ethical codes and value system in the work culture.

Semester IV

Subject and code International Financial Management

Course Outcomes:

- Co 1: To study different components of the International Financial and Monetary System.
- Co 2: To study various aspects of balance of payment and affects of various cross border transaction on BOP account.

Co 3: To have an understanding of forex market and its regulatory framework.
Co 4: To provide knowledge in exchange rates and exchange risk management.
Co 5: To study the various methods of managing currency exposure.
Co 6: To provide knowledge in various aspects of international financial management.

Subject and code: PH 352.4 Cost Analysis for Managerial Decisions

Course Outcomes:

CO 1 :To study different components of the International Financial and Monetary System.
CO 2: To study various aspects of balance of payment and affects of various cross border transaction on BOP account.
CO 3: To have an understanding of forex market and its regulatory framework.
CO 4: To provide knowledge in exchange rates and exchange risk management.
CO 5: To study the various methods of managing currency exposure.
CO 6: To provide knowledge in various aspects of international financial management.

Subject and code: PH 353.4P R for Data Analysis

Course Outcomes:

CO 1: Analyse the basics in R programming in terms of constructs, control statements, string functions
CO 2: Organize, Import, review, manipulate and summarize data-sets in R
CO 3: Utilize data-sets to create testable hypotheses and identify appropriate statistical tests
CO 4: Evaluate R programming from a statistical perspective

Subject and code:PH 354.4 Project

Course Outcomes:

CO 1 :Students will be able to develop research interest and culture in their respective field of study
CO 2 :Students explore the social relevance and application of their respective subject
CO 3 :It provides practical knowledge and exposure in their studied area
CO 4 :It enables the students to make in depth study of the particular issue and explore solution to the problems the society facing in the field of commerce and management

Subject and code: PS 355.4 Financial Derivatives

Course Outcomes:

CO-1:To explain the role of derivative markets.
CO-2:To examine the trading mechanics derivative contracts.
CO-3:To examine the different derivative instruments.
CO-4:To apply the valuation models for pricing the derivatives.
CO-5:To analyse the option hedging strategies

Subject and code: PS 356.4 Corporate Law, Ethics and Governance

Course Outcomes:

CO 1: Evaluate the regulatory aspects and the broader procedural aspects involved in different types of companies covering the Companies Act 2013 and Rules there under.
CO 2: Equip with framework provided for safe investments and companies surveillance by SEBI
CO 3: Explain the accountability of corporates towards its stakeholders to create an integrated value framework for sustainability
CO 4: Critically evaluate Corporate Social Responsibility with real life examples and its different dimensions.
CO 5: Create a framework for effective corporate governance by understanding the role

and responsibility of different stakeholders in large business corporations
Subject and code: PS 357.4 Business Analysis and Valuation
Course Outcomes:
CO -1: To examine the effectiveness of an organisation's strategy. CO -2: To appraise the techniques of valuation. CO -3: To discuss the approaches to enterprise valuation. CO -4: To develop skills for the valuation of assets and liabilities. CO -5: To explain the value based management methods.
Subject and code: PS 358.4 Portfolio Theory and Management
Course Outcomes:
CO 1: Describe the environment of investment and risk return framework. CO 2: Evaluate portfolios along with a deep understanding of Capital market theory and associated models. CO 3: Examine the equity investments using Portfolio Evaluation & Performance measures CO 4: Construct the portfolio by using the ideas of great investors in equity investment

Department Name:	P 500 M.Sc. (Biotechnology)
PROGRAMME OUTCOMES	
To provide state-of-the-art knowledge and skills in the field of Biotechnology. To generate manpower trained in Biotechnology suited to meet the needs of the industry and academia. To train students to pursue committed research in the field of Biotechnology. To train students for practical oriented project work. To have a positive impact on human and animal health, agriculture and environment in the region. To have 100 % placement for all the students who take up this course.	
PROGRAMME SPECIFIC OUTCOMES	
A post-graduate student upon completion of the programme is expected to gain the following attributes: PSO 1: In-depth knowledge of Biotechnology with inter-disciplinary perspective of other branches of life sciences. PSO 2: Develop an ability to solve, analyze and interpret data generated from experiments done in project work or practical courses. PSO 3: Competence for research and innovation in Biotechnology as a skilled experimentalist. PSO 4: Analytical and problem-solving skills with regard to biochemical principles of life processes and technologies for combating human diseases. PSO 5: Critical thinking about the concepts in Biotechnology and ability to critically review scientific literature for development of new theories and testable hypothesis. PSO 6: Capacity for decision making with regard to scientific progress, personal development and career choice. PSO 7: Ability to work independently, while still promoting team work and collaboration skills. PSO 8: Oratory (public speaking), scientific conversation and writing skills. PSO 9: Leadership and organizational skills. PSO 10: Execute their professional roles in society as biotechnology professionals,	

employers and employees in various industries, regulators, researchers, educators and managers.

PSO 11: Demonstration of integrity, honesty, ethical behaviour and sense of responsibility. PSO 12: Appreciation of diversity in scientific community and responsibility towards society and nation.

PSO13: Environmental awareness vis-à-vis bio-waste generation, disposal and management and safety and security issues.

Subject and code: PH 501.1 BIOCHEMISTRY AND METABOLISM

Course Outcomes:

At the end of the course, a student should be able to:

- Delineate structure, function and interrelationships of various biomolecules and consequences of deviation from the normal.
- Translate the importance of biological macromolecules and their role in living systems.
- Execute a particular metabolic pathway involved in carbohydrate, lipid, amino acid and nucleic acid metabolism, their interconnections.

Evaluate information relevant to concepts on cellular regulation of different metabolic pathways.

Subject and code: PH 502.1 MICROBIOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Apply the principles in classifying microbial systems and know their beneficial and harmful effects.
- Employ various cultivation methods starting from screening to preservation of the desired microbe.
- Understand the major virus groups with their elementary features that is responsible for causing the most dreaded diseases.
- Appreciate the microbial diversity and their interactions, and design suitable strategies to tackle unsustainable agricultural and environmental practices

Subject and code: PH 503.1 CELL AND MOLECULAR BIOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Describe the organization of macromolecules on membranes and cellular processes.
- Differentiate the various cell signaling pathways. Illustrate regulation of gene expression in eukaryotes.
- Take up research in the field of cell and molecular biology.

Subject and code: PH 504.1 P BIOCHEMISTRY & METABOLISM PRACTICALS

Course Outcomes:

At the end of the course, a student should be able to:

- Apply knowledge of biochemistry and metabolism in various cellular functions, and the application of research involved in various biochemical processes.
- Investigate and analyse the unknown carbohydrate or amino acid compound present in the given sample qualitatively.

- Demonstrate a proficiency in developing relevant biochemical questions, carrying out laboratory investigations to answer those questions, and critically analysing, interpreting, and presenting the results of their experiments.

Construct the standard curve, analyse the data and interpret the results.

Subject and code: PH 504.1 P BIOCHEMISTRY & METABOLISM PRACTICALS

Course Outcomes:

At the end of the course, a student should be able to:

- Apply knowledge of biochemistry and metabolism in various cellular functions, and the application of research involved in various biochemical processes.
- Investigate and analyse the unknown carbohydrate or amino acid compound present in the given sample qualitatively.
- Demonstrate a proficiency in developing relevant biochemical questions, carrying out laboratory investigations to answer those questions, and critically analysing, interpreting, and presenting the results of their experiments.

Construct the standard curve, analyse the data and interpret the results.

Subject and code: PH 505.1 P MICROBIOLOGY PRACTICALS

Course Outcomes:

- At the end of the course, a student should be able to:
- Evaluate the various physical and chemical growth requirements of bacteria and equip various methods of bacterial growth measurement.
- Execute microbial techniques for the isolation of pure cultures of bacteria.
- Master staining procedures, aseptic techniques and be able to perform routine culture handling tasks safely and effectively.

Comprehend the various methods for identification of unknown microorganisms.

- **Subject and code: PH 506.1 P CELL AND MOLECULAR BIOLOGY PRACTICALS**

- **Course Outcomes:**

At the end of the course, a student should be able to:

- Assess membrane transport.
- Prepare slides.
- Differentiate cell divisions.
- Isolate macromolecules and perform qualitative and quantitative assays.
-

Subject and code: PS 507.1 MOLECULAR AND HUMAN GENETICS

Course Outcomes:

- On completion of this course, a student should be able to:
- Discuss the chromosomal mechanisms of sex determination and dosage compensation.
- Demonstrate the ability to distinguish between a normal and an abnormal karyotype and the underlying causes of genetic disorders at the molecular level.
- Categorize the different methods available for genetic testing and for the treatment and management of genetic disorders.

Construct pedigrees and analyse the patterns of inheritance in the families.

- **Subject and code: PS 508.1 IMMUNOLOGY**

- **Course Outcomes:**

At the end of the course, a student should be able to:

- Describe which cell types and organs present in the immune response.
- Apply basic techniques for identifying antigen-antibody interactions.
- Exemplify the adverse effect of immune system including allergy, hypersensitivity and autoimmunity.
- Elucidate the reasons for immunization and aware of different vaccination.

Subject and code: PS 509.1 DEVELOPMENTAL BIOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Describe the main stages of development common to most multicellular organisms.
- Demonstrate the cellular behaviours that lead to morphological change during development.
- Illustrate how gene activation plays a role in differentiation.

Apply the knowledge gained in the field of research.

Subject and code: PS 510.1P MOLECULAR AND HUMAN GENETICS PRACTICALS

Course Outcomes:

At the end of the course, a student should be able to:

- Describe the salient features of *Drosophila melanogaster*.
- Apply the basic technique of separation of the eye pigments of *D. melanogaster* by chromatographic technique.
- Analyze the different types of syndrome and their karyotype.

Elaborate the knowledge on sex determination and chromosomal aberrations.

Subject and code: PS 511.1P IMMUNOLOGY PRACTICALS

Course Outcomes:

- At the end of the course, a student should be able to:
- Acquire technical skills and knowledge on staining, identify various immune cells and enumerate them.
- Competently perform antigen-antibody interaction for diagnostic test.
- Analyze the components of human sera by performing agarose gel electrophoresis.

Perform blood Donation and its procedure, product packing, separation of blood products and labeling.

- **Subject and code: PS 512.1P DEVELOPMENTAL BIOLOGY PRACTICALS**

- **Course Outcomes:**

At the end of the course, a student should be able to:

- Assess the importance of model organisms in developmental biology.
- Distinguish between the stages of development of different organisms.
- Develop practical skills in isolation and staining.
- Apply the knowledge in contribution towards research.

SEMESTER II

Subject and code: PH 501.2 GENETIC ENGINEERING

Course Outcomes:

At the end of the course, a student should be able to:

- Demonstrate the ability to design recombinant molecules.
- Design forward and reverse primer to amplify a gene of interest.
- Explain transcriptomic analysis and major RNA-Seq platforms.

Apply learned knowledge to their future research.
Subject and code: PH 502.2 ENZYMOLOGY
Course Outcomes:
On completion of this course, a student should be able to: <ul style="list-style-type: none"> • Describe the structure, functions and the mechanisms of action of enzymes. • Demonstrate the kinetics of enzyme catalyzed reactions and regulatory processes. • Explain the different immobilization techniques and industrial and clinical scope of enzymes. Apply the principles of enzyme inhibitions in clinical research.
Subject and code: PH 503.2 P GENETIC ENGINEERING PRACTICALS
Course Outcomes:
On completion of this course, a student should be able to: <ul style="list-style-type: none"> • Isolate and purify genomic DNA/RNA. • Demonstrate restriction digestion and ligation experiment. • Standardize a PCR protocol for amplification of a specific target gene. Gather a thorough knowledge in genetic engineering methods practiced in research.
Subject and code: PH 504.2 P ENZYMOLOGY PRACTICALS
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Design the experiments related to isolation and purification of enzymes. • Apply and extend their knowledge and understanding of enzyme catalysis in research. • Develop accurate skills in enzyme assays. Construct the standard curve, critically analyse the data and interp
Subject and code: PS 505.2 RESEARCH METHODOLOGY, ETHICS AND PS 505.2 RESEARCH METHODOLOGY, ETHICS AND
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Explain the differences between research methodologies. • Design a small research project with appropriate research method. • Apply correct ways of referencing to and citing from scientific literature. Analyze, contrast, compare and criticize scientific literature and write a research report/thesis.
Subject and code: PS 506.2 ANALYTICAL TECHNIQUES IN BIOTECHNOLOGY
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Discuss the principle and instrumentation of HPTLC, HPLC, GC for identification, and characterization of compounds. • Apply the principles and theory of UV-Vis spectroscopy, MS (MALDI-TOF and LC-MS/MS), NMR and XRD for the identification and characterization of organic compounds. • Select an appropriate method of centrifugation or electrophoresis for the separation and identification of analyte molecule by applying the theory and principle of various methods of centrifugation and electrophoresis. Explain the application of radioisotopes in biology and Instrumentation of Geiger-Muller counter and Solid, Liquid scintillation counters and autoradiography for detection of radio

activity.
Subject and code: PS 507.2 MULTIOMICS
Course Outcomes:
<p>Students should be able to:</p> <ul style="list-style-type: none"> • Gain knowledge of various computational tools and methods in bioinformatics. • Discern the crucial concepts and techniques applied in genomics, transcriptomics and proteomics. • Understand the importance of genomics, proteomics, metabolomics and their applications in various applied areas of biology. <p>Formulate and assess experimental design for solving theoretical and experimental problems in Genomics, Proteomics and metabolomics.</p>
Subject and code: PS 508.2 BIOSAFETY AND BIOETHICS
Course Outcomes:
<p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Evaluate biosafety and bioethics in the context of modern biotechnology. • Describe the standard operating procedures for biotechnology research and assign Biosafety levels. • Appraise the relevance of different international agreements and protocols for biosafety. <p>Develop the skills to think critically about risks and risk mitigation strategies needed in their own scientific environment.</p>
Subject and code: PS 509.2 P RESEARCH METHODOLOGY AND SCIENTIFIC COMMUNICATION
Course Outcomes:
<p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Explain key research designs and techniques. • Identify various sources of information for literature review. • Read, comprehend, and explain research articles in their academic discipline. • Collect, analyze and represent their data and write a research report/ thesis.
Subject and code: PS 510.2 P ANALYTICAL TECHNIQUES IN BIOTECHNOLOGY PRACTICALS
Course Outcomes:
<p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Perform the identification and characterization of various biomolecules using UV Vis spectroscopy, AAS and flame photometry. • Demonstrate the strengths, limitations and use of various chromatographic techniques including paper, TLC, gel filtration and HPLC for the analysis of various biomolecules. • Interpret and analyse the result obtained from various colorimetric assays of protein by plotting a standard curve. • Examine the topography, morphology and composition of various samples by creating the 3D images using SEM.
Subject and code: PS 511.2 P MULTIOMICS PRACTICALS
Course Outcomes:
<p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Assess the nucleotide sequence data of the given species using NCBI/ EMBL/ DDBJ. • Analyse the protein sequence of the species using PIR and Swissprot/ UniProt.

- Predict the structure of protein using PDB. View the 3D structure of a protein using RASMOL software.
- Carry out the multiple sequence alignment of the proteins with Clustal OMEGA. Search the database of proteins/ nucleic acids using BLAST program.

Subject and code: PS 512.2P BIOSAFETY AND BIOETHICS PRACTICAL

Course Outcomes:

At the end of the course, a student should be able to:

- Demonstrate good laboratory procedures and practices.
- Examine the design of confinement facilities at different Biosafety levels.
- Apply the risk analysis framework to their own or their peers' scientific activities.
- Develop a research career in the relevant area, to handle various situations he/she encounters, with adequate caution and care.

Subject and code: PO 513.2 QUALITY ASSURANCE AND QUALITY CONTROL IN PRODUCT DEVELOPMENT

Course Outcomes:

At the end of the course, a student should be able to:

- Apply quality tools for quality management and main guidelines & requirements of GMP thus contributing to the organization when it comes to understanding industry standards.
- Integrate the principles of the GMP quality system and quality control and the important procedures when dealing with complaints and recalls.
- Justify the requirements for good documentation practice and complete appropriate documents in compliance with regulatory guidelines.
- Execute and adopt quickly into the GMP environment.

Subject and code: PO 514.2 RECENT TRENDS IN BIOTECHNOLOGY

Course Outcomes:

On completion of the course, a student should be able to:

- Demonstrate deep understanding of various methods for gene transfer, gene therapy and in vitro fertilisation of animals.
- Discuss and analyze scientific questions related to transgenic plants, role of microbes in industry and agriculture.
- Implement the techniques used in molecular diagnostics.
- Evaluate the biosensor technology in Healthcare, Food technology and Environmental monitoring.

SEMESTER – III

Subject and code: PH 501.3 ANIMAL BIOTECHNOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Demonstrate aseptic techniques and good laboratory practices.
- Describe the bioprocess technology for economically important products.
- Apply the knowledge for improvement of farm animals.
- Take up animal based biological research /relevant biotech industry.

Subject and code: PH 502.3 PLANT BIOTECHNOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Understand the organization of plant genome and intergenomic interaction.

- Appraise various methods of marker assistant selection in plant breeding.
- Describe various genes used in plant transformation and the role of transgenic plants in human welfare.
- Translate the concepts in future studies and debate on the issue related to GMOs and evaluate its significances

Subject and code: PH 503.3P ANIMAL BIOTECHNOLOGY PRACTICAL

Course Outcomes:

At the end of the course, a student should be able to:

- Apply Good Laboratory practices and aseptic techniques.
- Initiate primary explant culture and maintain cell lines.
- Isolate cells from tissues.
- Determine cytotoxicity and growth kinetics.

Subject and code: PH 504.3P PLANT BIOTECHNOLOGY PRACTICALS

Course Outcomes:

On completion of this course, a student should be able to:

- Apply Good Laboratory practices and aseptic techniques.
- Prepare the media and other reagents, initiate primary cell culture, Estimate the viability of cells as well as cell concentration.
- Perform identification of correct stage of anther for haploid culture and establish and the establishment of secondary embryogenic tissues.
- Apply knowledge for large scale clonal propagation of plants through various micropropagation techniques.

Subject and code: PS 505.3 INDUSTRIAL BIOTECHNOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Explain the screening, strain improvement and design of fermentation media.
- Assess the conditions for efficient and sustainable design of bioprocesses.
- Integrate scientific and technological knowledge on the use of bioprocesses for industrial products on the cell and process level.
- Analyze the processes and their application in healthcare, agriculture, energy and the environment.

Subject and code: PS 506.3 ENVIRONMENTAL BIOTECHNOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Explain and appreciate the concepts of ecology.
- Critically examine biodiversity and human linkages, and appreciate the need for biodiversity conservation and contribute to the developmental pathways and policy framework.
- Relate an environmental issue with its cause and take an initiative in solving them.
- Investigate and develop new biological technologies to mitigate environmental problems.

Subject and code: PS 507.3 PLANT BREEDING AND SEED TECHNOLOGY

Course Outcomes:

At the end of the course, a student should be able to:

- Demonstrate an understanding of the automation in plant micropropagation.
- Determine the most appropriate method for the breeding of self, cross pollinated

<p>and vegetatively propagated crop plants.</p> <ul style="list-style-type: none"> • Develop a management plan to eliminate pathogens from plant parts and produce Tissue Culture raised plants with Export potentials. • Apply various acts and guidelines in production of certified seeds and plant breeding.
<p>Subject and code: PS 508.3 MARINE BIOTECHNOLOGY</p>
<p>Course Outcomes:</p> <p>On completion of this course, a student should be able to:</p> <ul style="list-style-type: none"> • Comprehend the uses of seaweeds and their products. • Develop the methods of identification of therapeutic agents from several marine species. • Understand the marine fish hatchery, Shrimp hatchery and farming techniques. • Apply biotechnological principles for feed formulation and its manufacturing.
<p>Subject and code: PS 509.3 P INDUSTRIAL BIOTECHNOLOGY PRACTICALS</p>
<p>Course Outcomes:</p> <p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Execute various selective isolation, replica plating, growth kinetics and the role of various factors affecting the process of microbial growth. • Purify proteins by using various proteins including centrifugation, precipitation, dialysis and ion exchange chromatography. • Evaluate different pathways followed in or by the microbes involved in production of these bio-chemicals. Method of manipulating these pathways to get desired yield. • Demonstrate proficiency in methodologies and equipment employed.
<p>Subject and code: PS 510.3 P ENVIRONMENTAL BIOTECHNOLOGY PRACTICALS</p>
<p>Course Outcomes:</p> <p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Execute scientific collection and preservation of samples. • Perform the analytical tests aimed at establishing the concentration of pollutants in a water sample. • Examine the water quality by microbiological tests. • Demonstrate proficiency in methodologies and equipment employed for the analysis of samples.
<p>Subject and code: PS 511.3 P PLANT BREEDING AND SEED TECHNOLOGY PRACTICALS</p>
<p>Course Outcomes:</p> <p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Demonstrate various layering, grafting and budding techniques. • Perform the genetic analysis of variation in plants. • Design and perform plant hybridization experiments. • Produce synthetic seeds, perform the cryopreservation and evaluate the viability of the seeds.
<p>Subject and code: PO 513.3 CLINICAL DRUG DEVELOPMENT AND IPR</p>
<p>Course Outcomes:</p> <p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the steps involved in the drug discovery and

<p>design process.</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the importance of strict quality control and regulation in the drug development process, and an awareness of GMP, GLP and GDoP. • Design and manage various essential documents for the conduct of a clinical trial. • Apply intellectual property law principles (including copyright, patents, designs and trademarks) to real problems and analyze the social impact of intellectual property law and policy.
<p>Subject and code: PO 514.3 BIOREMEDIATION TECHNIQUES</p>
<p>Course Outcomes:</p>
<p>At the end of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Describe the concept and applications of bioremediation. • Evaluate the manipulation of prokaryotic and eukaryotic cells in culture, and to apply specific cellular and molecular techniques. • Appraise when each bioremediation strategy would be most applicable, based on the polluted site characteristics. • Develop a new and suitable technique to clean-up the environmental contaminants using the knowledge in bioremediation techniques.
<p style="text-align: center;">Semester-IV</p>
<p>Subject and code: PH 501.4 FOOD BIOTECHNOLOGY</p>
<p>Course Outcomes:</p>
<p>On completion of the course, a student should be able to:</p> <ul style="list-style-type: none"> • Explain the importance of food laws, acts, quality control and sensory evaluations. • Describe the factors affecting growth of microorganisms. • Apply the knowledge of processing and preservation techniques in increasing the shelf life of food products. • Produce different oriental and traditional fermented foods.
<p>Subject and code: PH 502.4 MOLECULAR DIAGNOSTICS AND IMMUNOTECHNIQUES</p>
<p>Course Outcomes:</p>
<p>On completion of this course, students should be able to:</p> <ul style="list-style-type: none"> • Design PCR based diagnostic method for infectious diseases. • Understand genomics, proteomics and metabolomics that could be employed in early diagnosis and prognosis of human diseases. • Execute this knowledge in the processes of antibody engineering, vaccine development, immunization and cancer therapy. • Apply techniques of molecular biology/immunology in research work/pharma industries and other relevant biotech industries.
<p>Subject and code: PH 503.4 PROJECT DISSERTATION/ INTERNSHIP REPORT AND VIVA VOCE</p>
<p>Course Outcomes:</p>
<ul style="list-style-type: none"> • Practical approach with topic is learnt by students
<p>Subject and code: PH 504.4P FOOD BIOTECHNOLOGY PRACTICALS</p>
<p>Course Outcomes:</p>
<p>On completion of the course students will be able to:</p> <ul style="list-style-type: none"> • Explain the different microorganisms associated with food and evaluate the microbial estimation in food.

<ul style="list-style-type: none"> • Identify and control adulterants in various foods and evaluate food quality. • Apply the technique of growing mushrooms as an alternative food product. • Comprehend the knowledge of wine production and launch a startup.
Subject and code: PH 505.4P MOLECULAR DIAGNOSTICS AND IMMUNO TECHNIQUES
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Design and conduct PCR based experiments for disease diagnostics. • Perform nested PCR experiments for identification of a microorganism. • Demonstrate Real Time PCR. • Perform various immune techniques like ELISA, western blotting.
Subject and code: PS 506.4 CLINICAL RESEARCH, IPR AND PATENTS
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Demonstrate an understanding of the steps involved in the drug discovery and design process. • Demonstrate an understanding of the importance of strict quality control and regulation in the drug development process, and an awareness of GMP, GLP and GDoP. • Design and manage various essential documents for the conduct of a clinical trial. • Apply intellectual property law principles (including copyright, patents, designs and trademarks) to real problems and analyze the social impact of intellectual property law and policy.
Subject and code: PS 507.4 STEM CELL TECHNOLOGY AND REGENERATIVE MEDICINE
Course Outcomes:
On completion of this course, students should be able to: <ul style="list-style-type: none"> • Demonstrate knowledge of different types of stem cells and their specific characteristics, sources of stem cells, their isolation and characterization. • Understand the clinical need for stem cell therapy and tissue engineering in regenerative medicine. • Understand the innovation and technological progress of stem cell research in recent years. Lead a professional career in stem cell technology and cell/tissue engineering in a wide range of health care establishments.
Subject and code: PS 508.4 BIO-ENTREPRENEURSHIP
Course Outcomes:
At the end of the course, a student should be able to: <ul style="list-style-type: none"> • Prepare business plan for biotechnology entrepreneurship. • Address the market challenges for a new enterprise. • Assess the global market scenario of their product. • Manage technology transfer for new biotechnology product and launch a startup.

Department Name:	P 510 M.Sc. (Biochemistry)
PROGRAMME OUTCOMES	

PO1: Comprehensive knowledge of Biochemistry with inter-disciplinary perspective of other branches of life sciences

PO2: Competence to use modern biochemical and molecular techniques to perform experiments to test scientific hypotheses, analyse data, trouble -shoot and draw conclusions from the experimental data in labs.

PO3: Ability to write research thesis, and present and defend their findings to scientific audiences at regional or national levels.

PO4: Capacity to work independently, while still promoting teamwork and collaboration skills.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Fundamental understanding of Biochemistry, structure and function of biological molecule, mechanisms of biological processes and bioenergetics.

PSO 2: Competence to understand theories and methods that can be used to link Biochemistry to related subjects such as biotechnology, molecular biology, genetics, pharmacology, immunology, genetic engineering and Biostatistics and informatics

PSO 3: Ability to make quantitative measurements of parameters that are routinely encountered in practical/ experimental biochemistry and apply a range of techniques that are commonly used in biomolecule analysis.

PSO 4: Ability to analyse and interpret biochemical data acquired from the experimental procedures and demonstrates analytical and problem-solving skills with regard to biochemical principles of life processes.

PSO 5: Competence in research and innovation in Biochemistry and in related field of specialization and the ability to critically review scientific literature for development of new theories and testable hypothesis.

PSO 6: Basic professional skills pertaining to biochemical analysis, and the ability to use these skills in specific areas such as technology development, industrial production and skills that are relevant to biochemistry-related jobs and employment opportunities

PSO 7: Skill of articulation of ideas, scientific writing, authentic reporting, scientific conversation and writing, capacity for decision making with regard to scientific progress, personal development and career choice.

PSO 8: Entrepreneurial and social competence, the ability to plan and manage projects in order to achieve objectives

PSO 9: Leadership and organizational skills, ability to work independently, while still promoting team work and collaboration skills.

PSO 10: Ability to translate knowledge of biochemistry to address environment issues including, waste disposal management, safety and security issues, nature conservation, sustainability development etc.

PSO 11: Relevant generic and technical skills including communication skills effective interaction with others, listening, speaking, observational skills, utilization of e-resources and ICT.

PSO 12: Professional behavior with respect to attribute like ethical values, integrity, honesty, and sense of responsibility.

Semester-1

Subject and code: PH 511.1. BIOMOLECULES

Course Outcomes:

CO 1: Explain the basic aspects of amino acids, peptides, organization of protein structure, carbohydrates, lipids and nucleic acids

CO 2: Describe the structure - function relationship of proteins and nucleic acids.

CO 3: State the role of various biomolecules in health and disease.

CO 4: Interpret the different structures of biomolecules and their implications on different disease states.

CO 5: Explain classification and properties of various biomolecules.

Subject and code: PH 512.1 BIOCHEMICAL TECHNIQUES

Course Outcomes:

CO 1: List the basic instruments used in analytical biochemistry and state their applications.

CO 2: Explain the principles and applications of important techniques used in isolation, purification and characterization of various biomolecules.

CO 3: Interpret the various molecular spectrum obtained from different spectral techniques.

CO 4: Explain preparation and analysis of different samples biological samples to be subjected to various analytical techniques.

CO 5: Gain technical competency in different advanced techniques with a comprehensive understanding of their principle, instrumentation and applications.

Subject and code: PH 513.1P BIOQUANTITATION

Course Outcomes:

CO 1: Learn good laboratory practices and be able to prepare basics of solutions

CO 2: Perform and explain the principle of colorimetric analysis of various biomolecules.

CO 3: Interpret and present scientific and technical information derived from laboratory experiments.

Subject and code: PS 514.1 ORGANIC AND PHYSICAL BIOCHEMISTRY

Course Outcomes:

CO 1: Explain the basic concepts of different types of chemical bonds, that can be useful to understand the chemical nature of biomolecules.

CO 2: Describe the thermodynamic parameters and their variations in homeostasis of cells and its biomolecules and their interaction with water.

CO 3: Acquire knowledge about preparation of radioisotopes, their applications in studying the cellular metabolic processes.

CO 4: Display skills in problem solving, critical thinking and analytical reasoning as applied to problems in organic and physical chemistry

Subject and code: PS 515.1 PHYSIOLOGY & NUTRITION

Course Outcomes:

CO 1: Explain the functions of important physiological systems including the cardio-respiratory, reproductive renal, and metabolic systems

CO 2: Explain the integration of the different organs in maintaining homeostasis

CO 3: Discuss diseases, disorders, and conditions that result from a homeostatic imbalance

CO 4: State the role of nutrients, caloric requirements and the deficiency disorders

Subject and code: PS 516.1 GENERAL MICROBIOLOGY

Course Outcomes:

CO 1: Acquire knowledge about the microorganisms around us, development of the discipline of Microbiology and the contributions made by prominent scientists in this field.

CO 2: Differentiate between the useful and harmful microorganisms and explain the structure and functions of microscopic organisms

CO 3: Explain sterilization of media and assessment of sterility.

CO 4: Understand the importance of microorganisms as model systems in genetics and

biochemistry.
Subject and code: PS 517.1P ANALYTICAL TECHNIQUES
Course Outcomes:
CO 1: Get hands on training for different types of chromatographic techniques CO 2: Perform different types of electrophoretic techniques used to separate proteins and analyse the results. CO 3: Perform various extraction procedures used to extract different molecules from biological samples.
Subject and code: PS 518.1P EXPERIMENTAL MICROBIOLOGY
Course Outcomes:
CO 1: Isolate microbes from provided samples and perform bacterial cultures in different media. CO 2: Perform routine microbiological practices such as sterilization, media preparation, maintenance of microbial culture, and staining. CO 3: Culture and screen microbes for antibiotic resistance.
Semester-2
Subject and code: PH 511.2 ENZYMOLOGY
Course Outcomes:
CO 1: Classify and explain the general properties of enzymes CO 2: Describe and use the equations of enzyme kinetics. CO 3: Describe the catalytic mechanisms of most well-characterized enzymes CO 4: Describe the mechanisms of enzyme regulation CO 5: Explain the applications of enzymes in diagnosis, monitoring, and therapy.
Subject and code: PH 512.2 METABOLISM
Course Outcomes:
CO 1: Describe the metabolism of carbohydrates, and its regulation CO 2: Describe the metabolism of lipids and its regulation CO 3: Explain the importance of high energy compounds, electron transport chain, and synthesis of ATP. CO 4: Explain the integration of carbohydrate and lipid metabolism CO 5: Correlate synthesis and breakdown of biomolecules with various metabolic disorders
Subject and code: PH.513.2P Practical Enzymology
Course Outcomes:
CO 1: Demonstrate practical understanding of enzyme kinetics and its applications. CO 2: Demonstrate practical applications of monosubstrate and bisubstrate assays and an overall understanding of using various biochemical kinetic reactions for isolating and purifying specific analytes. CO 3: Isolate and purify enzymes using downstream processing CO 4: Conduct quantitative assay of clinically important enzymes
Subject and code: PS 514.2 RESEARCH METHODOLOGY AND ETHICS
Course Outcomes:
CO 1: Demonstrate an understanding of research design, procedures of sampling, data collection, analysis and reporting. CO 2: Describe the appropriate statistical methods required for a particular research design and apply appropriate statistical methods for analyzing one or two variables.

CO 3: Display an understanding of imperative issues in research ethics, like responsibility for research, scientific misconduct and ethical evaluation

CO 4: Demonstrate awareness on Intellectual property rights and patents

Subject and code: PS 515.2 BIOTECHNOLOGY

Course Outcomes:

CO 1: Explain strain improvement methods, isolation of industrial important microorganisms, different types of fermentation process and different recovery process of the final product formed.

CO 2: Demonstrate an understanding of animal cell culture, cell lines, application in tissue engineering and hybridoma technology.

CO 3: Explain basic concepts of Plant Biotechnology and its applications in agriculture like micro-propagation, haploid plants, embryo culture, hybrids

CO 4: Enlist the applications of microbiology in waste management, environmental pollution control.

Subject and code: PS 516.2. NEUROBIOCHEMISTRY

Course Outcomes:

CO 1: Demonstrate basic understanding of the nervous system and its functions.

CO 2: Explain basic concepts of physiology and structure of nervous system

CO 3: Describe the nature of neurotransmitters and its role in neuronal signal transmission

CO 4: Demonstrate concrete understanding of neuronal processes that involves key aspects of learning and memory.

Subject and code: PS 517.2P PRACTICAL BIOTECHNOLOGY

Course Outcomes:

CO 1: Gain practical knowledge on tissue culture laboratory set-up, sterilization and media preparation

CO 2: Perform animal and plant cell culture techniques

CO 3: Perform toxicity and cell viability assays on animal tissues and conduct water quality testing

Subject and code: PS 518.2P Experimental Neurobiochemistry

Course Outcomes:

CO 1: Quantify and analyse the effect of drugs/toxins on brain tissue

CO 2: Prepare tissue homogenates required for various biological assays and perform biochemical and histological assays to understand neuronal activity

CO 3: Evaluate the behavioural changes that take place under conditions of stress and anxiety and apply the information obtained

Subject and code: PO 519.2. Biochemistry of Diseases (Open Elective-I)

Course Outcomes:

CO 1: Demonstrate an understanding of the mechanisms of diseases- cause, transmission, detection, treatment and prevention.

CO 2: Understand general health check-ups, diagnosis and samples for disease analysis.

CO 3: Relate to any existing or emerging infection as well as will learn about drug resistance and its mechanisms.

CO 4: Acquire know-how to health research and develop new tools for their management.

Semester-3

Subject and code: PH 511.3 MOLECULAR BIOLOGY
Course Outcomes:
CO 1: Give an overview of the central dogma of life and the historical discoveries that led to our current understanding of molecular mechanisms of life CO 2: Describe the organization of prokaryotic and eukaryotic chromosome CO 3: Explain the processes of transcription/translation, posttranscriptional/posttranslational modifications. CO 4: Differentiate prokaryotic and eukaryotic gene expression and regulation CO 5: Identify the stages of the cell cycle, and explain the important checkpoints that a cell passes through during the cell cycle
Subject and code: PH 512.3 NITROGEN METABOLISM & PLANT BIOCHEMISTRY
Course Outcomes:
CO 1: Discuss nitrogen metabolism and general mechanisms of amino acid metabolism. CO 2: Describe pathways of degradation of proteins, purines and pyrimidines and Inborn errors of amino acid degradation CO 3: Identify important metabolites in plants and animals that are important to understand the significance of various metabolic pathways. CO 4: Explain the process of photosynthesis; metabolism of photo assimilates and the role of plant hormones. CO 5: Discuss photobiology and stress physiology in plants
Subject and code: PH 513.3P Metabolism and Clinical Biochemistry
Course Outcomes:
CO 1: Demonstrate ability to perform experiments to estimate metabolic parameters. CO 2: Perform microscopic & chemical analysis of Blood & urine CO 3: Analyse and interpret clinical and biochemical changes taking place in blood and urine under normal and pathological conditions.
Subject and code: PH 514.3P CELL & MOLECULAR BIOLOGY
Course Outcomes:
CO 1: Evaluate and apply knowledge of modern techniques in cellular biology for observation and identification of tissues and cells CO 2: Extract DNA, RNA and perform their analysis at molecular level. CO 3: Learn the different phases of cell division using molecular techniques. CO 4: Handle, maintain <i>Drosophila melanogaster</i> and perform experiments related to the model organism
Subject and code: PS 515.3 CELLULAR BIOCHEMISTRY
Course Outcomes:
CO 1: Outline the structure of various cellular organelles and describe the relationship between various cellular structures and their corresponding functions. CO 2: Describe the structure and properties of biological membranes and the processes of transport across cell membranes. CO 3: Discuss the general principles of cell communication and cell signaling. CO 4: Describe various cellular signal transduction pathways, specifically muscle contraction.
Subject and code: PS 516.3. CLINICAL BIOCHEMISTRY
Course Outcomes:
CO 1: Understand the basic concepts and principles of Clinical Biochemistry, detail on

the collection, preservation and storage of biological samples
 CO 2: Explain principles of laboratory automation and quality control in a clinical laboratory
 CO 3: Describe the different biochemical tests carried out in blood and urine for the diagnosis and prognosis of various disease conditions.
 CO 4: Clinically assess the laboratory indicators of physiologic conditions and diseases

Subject and code: PO 517.3 EVOLUTION AND ECOLOGY

Course Outcomes:

CO 1: Discuss the scientific theory of evolution and explain the points of the Modern Synthesis of evolutionary theory.
 CO 2: Demonstrate broad-based knowledge of the fundamentals of Ecology, and Evolution and the relationships among these disciplines
 CO 3: Describe the principal interactions between different species and how they affect the respective species.
 CO 4: Discuss the biogeochemical cycles, pollution, natural resource conservation and management

Semester-4

Subject and code: PH 511.4 IMMUNOLOGY

Course Outcomes:

CO 1: Define central immunological concepts and demonstrate basic knowledge of immunological processes at a cellular and molecular level.
 CO 2: Describe the cells and organs involved in immune response and compare and contrast innate and adaptive immunity
 CO 3: Elaborate on the concept of antigen, immunoglobulins and apply basic techniques for identifying antigen-antibody interactions.
 CO 4: Outline key events in antigen presentation, and the cell-mediated and humoral immune responses.
 CO 5: Explain the basis of immunological tolerance, autoimmunity, hypersensitive reactions, cancer immunology and principles governing vaccination.

Subject and code: PH 512.4. GENETICS

Course Outcomes:

CO 1: Describe basic concepts of classical Genetics, Mendelian inheritance, extrachromosomal inheritance, sex-linked inheritance and population genetics
 CO 2: Elaborate on the concept of gene, genome organization, linkage and genetic mapping and recombination.
 CO 3: Discuss the different organisms used as models for studies in genetics
 CO 4: Comparing and contrasting different mutation and DNA repair mechanisms and relate variations in chromosome structure and number to phenotypic variation.
 CO 5: Describe the relationship between cell cycle and cancer and summarize the mechanism of transformation of cells

Subject and code: PH 513.4P PROJECT WORK

Course Outcomes:

CO 1: Demonstrate and understanding on the scope of research in their assigned dissertation research topic, troubleshoot, and successfully outline the aims and objectives for subsequent dissertation work.
 CO 2: Critically review literature, find gaps in research, select a research problem/ test hypothesis and design experiments.

CO 3: Perform experiments, collect data, draw conclusions and interpret the results and discuss the work in the light of work previously done by other researchers.

CO 4: Communicate in oral and written form by integrating data and interpretation and relate to the concept of ethics in research

Subject and code: PS 514.4 GENETIC ENGINEERING AND BIOINFORMATICS

Course Outcomes:

CO 1: Acquire knowledge about the advances in modification, and recombination of DNA or other nucleic acid molecules to modify an organism.

CO 2: Enlist the vectors used in genetic engineering and discuss their application

CO 3: Discuss tools and techniques of genetic engineering like transformation, hybridization, transcriptome analysis, sequencing and more.

CO 4: Describe and use the biological databases, perform structured query, data retrieval and analyse and discuss the results

Subject and code: PS 514.4 CLINICAL TOXICOLOGY

Course Outcomes:

CO 1: Describe the general principles of clinical toxicology and discuss factors that influence toxicity.

CO 2: Explain the basics of pharmacodynamics, pharmacokinetics and PK/PD correlation.

CO 3: Recognize system-specific and organ-specific toxic effects and discuss metabolism of toxicants

CO 4: Describe pharmacological actions, uses & adverse effects of drugs

Subject and code: PS 516.4 FOOD BIOCHEMISTRY

Course Outcomes:

CO 1: Discuss the concept of food and nutrition

CO 2: Enlist macro- and micronutrients, their sources and functions in the human body.

CO 3: Explain the concept of nutraceuticals and their role in treatment and prevention of various disease conditions

CO 4: Discuss the biochemical changes caused by microorganisms in context of fermented food and food spoilage

Subject and code: PS 517.4P Methods in Genetic Engineering and Bioinformatics

Course Outcomes:

CO 1: Learn to use tools and techniques in genetic engineering

CO 2: Demonstrate and explain transformation techniques and selection of transformants

CO 3: Perform biological database search, retrieve data and analyse the data employing various bioinformatics tools

Subject and code: PS 518.4P EXPERIMENTS IN FOOD SCIENCE

Course Outcomes:

CO 1: Explain principles behind analytical techniques associated with food.

CO 2: Perform various food analysis techniques and interpret the results

CO 3: Identify the biochemical component of various foods and assess the nutritive value of food sample.

Department Name: P 520 M.Sc. (Bioinformatics)

PROGRAMME OUTCOMES

- PO1 To prepare software professional with expertise in system design principals and development.
- PO2 Identify, understand and analyze scientific problems to formulate substantiated conclusions using first principles of mathematics, natural sciences, and applied sciences.
- PO3 Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
- PO4 Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5 Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO6 Apply ethical principles and commit to professional ethics and responsibilities and norms of the scientific practice.
- PO7 Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
- PO8 Communicate effectively on complex activities with the scientific community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PROGRAMME SPECIFIC OUTCOMES

- PEO1 Communicate Software Technology concepts, designs, and solutions effectively and professionally with real life examples and experiences.
- PEO2 Apply knowledge of computing to bring out effective designs and solutions for specific problems across various domains.
- PEO3 Ability to use various software development tools, multiple software systems, and modern computing platforms, with priority on the emerging technologies.
- PEO4 Comprehend the advances of technology in light of its impact on society and the social, legal, ethical and cultural ramifications of computer technology and their usage.

Semester-1

Subject and code: PH 521.1: BIOINFORMATICS AND BIOLOGICAL DATABASES

Course Outcomes:

- understand fundamental concepts in bioinformatics
- have an overview of the most important methods and tools that are used
- understand how some of the basic methods for biological sequence analysis works
- appreciate the need for methods to be accurate and efficient to implement some of the algorithms
- be capable of performing simple sequence analyses using existing tools

Subject and code: PH 522.1: COMPUTATIONAL AND STRUCTURAL BIOLOGY

Course Outcomes:

- Be fluent in using data structures and algorithms to design programs that model basic computational problems in life sciences related to sequence, structure and function of biological entities
- Have substantial knowledge of discrete mathematics issues useful in modeling living systems
- Apply appropriate techniques to deal with complexity of problems and complexity of programs

- Be able to apply this knowledge to independently model fundamental concepts in life sciences such as gene and their product annotation and protein-protein interaction

Subject and code: PH 523.1 : METABOLISM AND IMMUNOLOGY

Course Outcomes:

- Demonstrate a comprehensive and practical understanding of basic immunological principles
- Differentiate between innate and adaptive immunity.
- Explain the mechanisms and differences between primary and secondary responses and their relevance to immunizations.
- Identify the role of antigen presenting cells, lymphocytes, and phagocytic cells in immune responses.

Subject and code: PH 524.1: CELL AND MOLECULAR BIOLOGY

Course Outcomes:

- Describe the chemical components of the macromolecules of life and their functions
- Describe the structural differences between prokaryotic and eukaryotic cells or between plant and animal cells
- Classify living organisms within taxonomic groups
- Explain the differences and similarities between photosynthesis and cellular respiration
- Predict the outcome of a reaction catalyzed by enzymes under different conditions
- Apply the concepts of replication, transcription and translation

Subject and code: PH 525.1P BIOINFORMATICS AND COMPUTATIONAL BIOLOGY LAB

Course Outcomes:

- Understand the principles and some methods of genomics, gene expression and proteomics
 - Understand the concepts of the new, high-throughput and high-noise biology.
 - Search large databases, interpret their results.
 - Analyze gene expression using data from microarrays or RNA sequencing.
 - Analyze metabolomic, proteomics, and protein-protein interaction experiments
- Learning Outcomes: After this course, the student will be able to:
- Implement computational methods to solve problems involving measurement data.
 - Perform data acquisition from raw data.
 - Independently search for information and available methods to solve practical problems.
 - Present results, methods and conclusions in written and oral reports.

Subject and code: PS 526.1 : PROGRAMMING: JAVA & DATABASES FOR BIOINFORMATICS

Course Outcomes:

- Understand the concept of OOP as well as the purpose and usage principles of inheritance, polymorphism, encapsulation and method overloading.
- Identify classes, objects, members of a class and the relationships among them needed for a specific problem.
- Create Java application programs using sound OOP practices (e.g., interfaces and APIs) and proper program structuring
- Develop programs using the Java Collection API as well as the Java standard class library.

Subject and code: PS 527.1P PROGRAMMING: JAVA and DBMS LAB

Course Outcomes:

- Create databases using popular database management system products
- Solve problems by constructing database queries using the Structured Query Language
- Develop insights into future data management tool and technique trends
- Recommend and justify strategies for managing data security, privacy, audit/control, fraud detection, backup and recovery
- Comprehend the art of programming and, the structure and meaning of basic Java programs,
- Design and build programs using problem-solving techniques such as top-down design,
- Modify, compile, debug, and execute Java programs,
- Understand how to create graphical interfaces and Java applets for a Web page.

Subject and code: RESEARCH PROJECT – I

Course Outcomes:

Objectives: To give the Masters student experience and training in bioinformatics research through a high quality research project either in industry or academia. To understand and experience:

1. The technical skills required for efficient bioinformatics research;
2. The organisation and implementation of research;
3. Working to deadlines and as part of a team;
4. The skills required to record, report and write up original scientific research.

Semester-II

Subject and code: PH 521.2 : GENOMICS AND PROTEOMICS

Course Outcomes:

Subject and code:

Course Outcomes:

Subject and code:

Course Outcomes:

Subject and code:

Course Outcomes:

Subject and code: PH 522.2 : MOLECULAR MECHANICS AND SIMULATION

Course Outcomes:

- explain the foundations and concepts of statistical mechanics such as canonical distributions, ensembles and partition functions, as well as the statistical mechanical description of ideal and non-ideal gases and simple liquids
- account for the molecular mechanical description for interacting systems , including the theoretical basis behind force fields, intra molecular and intermolecular interactions
- connect the theoretical basis with its implementation in computational methods such as molecular dynamics simulations, energy optimisation, Monte Carlo and free energy calculations based on thermodynamics cycles
- use computer modelling methods for analysing bio molecular structure, function and dynamics.

Subject and code: PH 523.2P MOLECULAR MECHANICS AND GENOMICS LAB

Course Outcomes:

- Be able to develop and apply algorithms for structural bioinformatics ;

- Be able to implement algorithms related to Biomechanics and Biomolecular Systems
- To develop practical skills in computational approaches to analyze, predict, and engineer biomolecules

Subject and code: PS 524.2: BIOSTATISTICS

Course Outcomes:

- Calculate descriptive statistics related to Bioinformatics.
- Evaluate the utility of bivariate analysis methods given a data set.
- Calculate bivariate analyses & interpret the results of bivariate analyses.
- Calculate multivariate analyses to determine association among variables.
- Interpret the results of multivariate analyses and evaluate analysis results by testing hypotheses.

Subject and code: PS 525.2 : PERL-CGI and BIOPERL PROGRAMMING

Course Outcomes:

- Experience learning a programming language "on your own" as is commonly the case in industry.
- Understand the syntax and semantics of the Perl language and their similarity and differences from Java
- Understand how to develop and implement various types of programs in the Perl language.
- Understand various forms of data representation and structures supported by the Perl language
- Understand the appropriate applications of the Perl language

Subject and code: PS 526.2P PROGRAMMING : PERL-CGI & BIOSTATISTICS Lab

Course Outcomes:

- Understanding of basic Perl and ability to apply prerequisite basic programming concepts to Perl
- Write, compile, and run Perl programs, Analyze the effects of using Perl structures that implement decisions, loops, and store arrays and use these structures in a well-designed, OOP program.
- Create Perl programs that make use of various directories and use several files linked together.

Subject and code: PO 527.2: BIOETHICS, BIOSAFETY AND IPR

Course Outcomes:

- To present the basic concepts, principles, and elements of ethics
- To formulate the ethical principles relevant to Life Sciences, and related areas of concern
- To discuss the nature of specific practices, and to consider how these modify the application of moral principles

Subject and code: RESEARCH PROJECT – II

Course Outcomes:

Objectives: To give the Masters student experience and training in bioinformatics research through a high quality research project either in industry or academia. To understand and experience:

- The technical skills required for efficient bioinformatics research;
- The organisation and implementation of research;
- Working to deadlines and as part of a team;
- The skills required to record, report and write up original scientific research.

Semester-III	
Subject and code: PH 521.3 : SYNTHETIC BIOLOGY AND DRUG DESIGN	
Course Outcomes:	
<p>Learning Outcome: On completion of the course, the student should be able to:</p> <ul style="list-style-type: none"> •Importance of the various disciplines involved in the different phases of drug discovery and development. •Explain scientific, ethical and market-related considerations of importance in the drug development. •Carry out searches in databases to retrieve information relevant to the development of a new drug. •Account for decision points in the drug development process. •Explain how methods for predictions are used to make early decisions in the drug discovery and development. 	
Subject and code: PH 522.3 : SYSTEMS BIOLOGY AND METABOLIC ENGINEERING	
Course Outcomes:	
<p>Learning Outcome: At the end of the course student will be able to:</p> <ul style="list-style-type: none"> •Genomic, transcriptomic and proteomic techniques work, and discuss their strengths and limitations. •Interpret the results of biological studies that make use of these techniques. •Take the raw outputs of these techniques and perform basic data processing and analysis. •Use the R language to perform basic statistical and graphical analyses •Write basic scripts and pipelines for automating and repeating analyses 	
Subject and code: PH 523.3P SYSTEMS BIOLOGY AND DRUG DESIGN LAB	
Course Outcomes:	
<p>Learning Objectives: The specific objectives include:</p> <ul style="list-style-type: none"> •Learning the Principles of Systems Biology; Standard models and approaches. •To understand signal transduction and other biological processes; modeling of gene expression. •To understand modeling of evolution and self organization. •In silico docking/scoring; ADME and Toxicity prediction; Pharmacophore modeling 	
Subject and code: PS 524.3: BIG DATA ANALYTICS FOR BIOINFORMATICS	
Course Outcomes:	
<p>Learning Outcomes : At the end of this course, the student will</p> <ul style="list-style-type: none"> • Become familiar with the fundamental concepts of Big Data management and analytics; • Will become competent in recognizing challenges faced by applications dealing with very large volumes of data as well as in proposing scalable solutions for them; • Will be able to understand how Big Data impacts business intelligence, scientific discovery, and our day-to-day life. 	
Subject and code:PS 525.3: PROGRAMMING : PYTHON FOR BIOINFORMATICS	
Course Outcomes:	
<p>Learning Outcomes : Upon successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • Modify and extend legacy Python code to carry out the desired analysis, management, and manipulation of genetic, proteomic, and related biological data. • Implement dynamic programming algorithms to support the analysis of biological related data. 	

- Understand commonly used Python algorithms and modules related to implementing algorithms
- Implement the data structures that support the algorithms to retrieve and manipulate biological data from genomic and proteomic databases.
- Carry out preliminary computation-based bioinformatics research

Subject and code:PS 526.3P PROGRAMMING: PYTHON AND BIG DATA Lab

Course Outcomes:

Learning Outcome: Upon completion of the subject, students will be able to

- Understanding the basic concepts of Python & Preparing and pre-processing data
- Understanding the data aggregation and grouping concepts
- Leveraging web scraping and Visualizing the results of analytics effectively

Subject and code:PO 527.3: GENETIC COUNSELING

Course Outcomes:

Learning Outcomes: Upon successful completion of this course, a student will be able to:

- Be aware that certain conditions or diseases can have genetic causes
- Have clinical applicable knowledge in genetics with a focus on genetic guidance.
- Have knowledge about how genetic diseases influence both individual and family as society.

Subject and code:DOMAIN KNOWLEDGE PROJECT

Course Outcomes:

- Gather, organize, summarize and interpret literature with the purpose of formulating a proposal.
- Write a technical report summarizing state-of-the-art on an identified topic.
- Present the study using graphics and multimedia techniques.
- Define intended future work based on the technical review.

Semester-IV

Subject and code:PH 521.4 : INDUSTRY INTERNSHIP / PROJECT WORK / DISSERTATION

Course Outcomes:

Learning Objectives:
To provide students with an opportunity to gain work experience that will enhance and complement their academic learning. The course requirements are designed to provide a structure that will enable students to make connections between what they learn in the classroom and on the job, to further develop analytical and interpersonal skills, and to practice business writing skills.

Subject and code:PS 522.4 : DOMAIN KNOWLEDGE PROJECT

Course Outcomes:

The purpose of a thesis is to enable the student to develop deeper knowledge, understanding, capabilities and attitudes in the context of the programme of study. The thesis offers the opportunity to delve more deeply into and synthesise knowledge acquired in previous studies. A thesis for a Domain Knowledge should place emphasis on the technical/scientific/artistic aspects of the subject matter.
The overall goal of the thesis is for the student to display the knowledge and capability required for independent work as a Master of Science in Software Technology.
Learning objectives for a thesis are based on the objectives for Master of Science in Bioinformatics has Specific learning outcomes: for the student to demonstrate:

- Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work.
- Deeper knowledge of methods in the major subject/field of study.
- A capability to contribute to research and development work.
- The capability to use a holistic view to critically, independently and creatively identify, formulate and deal with complex issues.
- The capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate this work.
- The capability to create, analyse and critically evaluate different technical/architectural solutions.
- The capability to critically and systematically integrate knowledge.
- The capability to clearly present and discuss the conclusions as well as the knowledge and arguments that form the basis for these findings in written and spoken English.
- The capability to identify the issues that must be addressed within the framework of the specific thesis in order to take into consideration all relevant dimensions of sustainable development.
- A consciousness of the ethical aspects of research and development work.

Department Name:	P 530 M.Sc. (Software Technology)
PROGRAMME OUTCOMES	
<ul style="list-style-type: none"> • PEO1: Communicate Software Technology concepts, designs, and solutions effectively and professionally with real life examples and experiences. • PEO2: Apply knowledge of computing to bring out effective designs and solutions for specific problems across various domains. • PEO3 : Ability to use various software development tools, multiple software systems, and modern computing platforms, with priority on the emerging technologies. • PEO4 :Comprehend the advances of technology in light of its impact on society and the social, legal, ethical and cultural ramifications of computer technology and their usage. 	
PROGRAMME SPECIFIC OUTCOMES	
<p>PO1 To prepare software professional with expertise in system design principals and development.</p> <p>PO2 Identify, understand and analyze scientific problems to formulate substantiated conclusions using first principles of mathematics, natural sciences, and applied sciences.</p> <p>PO3 Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations</p> <p>PO4 Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</p> <p>PO5 Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.</p> <p>PO6</p> <p>Apply ethical principles and commit to professional ethics and responsibilities and norms of the scientific practice.</p>	

PO7 Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

PO8 Communicate effectively on complex activities with the scientific community and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO9 Demonstrate knowledge understanding of the scientific and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO10 Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional practice.

Subject and code: PH 531.1 DATA STRUCTURES AND ANALYSIS OF ALGORITHMS

Course Outcomes:

Course Outcomes: On successful completion of the course students will be able:

- To program using structures, function pointers, classes and objects.
- To implement and apply stack, queue and list data structures in different applications.
- To program binary tree, binary search tree, AVL tree and other tree data structures and traverse and represent expressions using tree data structure.
- To program different searching and sorting algorithms using c++ programming language, and also able to select suitable techniques based on the situation
- To create graph using array and using linked list. Ability to find shortest path in graph, able to traverse the graph

Subject and code: PH 532.1 RELATIONAL DATABASE MANAGEMENT SYSTEMS

Course Outcomes:

Course Outcomes: On successful completion of the course students will be able:

- Have good understanding about data and database systems. Describe the fundamental elements of relational database management systems.
- Understand the design of relational databases through the use of Entity-Relationship Diagrams and Normalization procedures and Develop basic skills in the use of SQL in defining and creating a database, inserting and modifying entries in a table.
- Gain Knowledge about Transaction, concurrency control and Lock management for database design.
- Have awareness about how data is stored in different storage media and how data is indexed.
- Prepare the students to understand the power of Query languages and also write PL/SQL transactions and to create different data objects.

Subject and code: PH 533.1 OBJECT ORIENTED PROGRAMMING WITH JAVA

Course Outcomes:

Course outcomes: After completing the course, the student should develop:

- An ability to understand the Object Oriented Concepts well and relate it with real world problems, develop solutions with programming constructs
- An understanding on classes, objects, methods, attributes, constructors and arrays and also write efficient programs using these concepts
- An ability to do string manipulation, understand and apply reusability using inheritance and also use Interfaces for efficient programming

- An understanding and clear knowledge about Exceptions and Exception handling, File I/O streams and also collection frameworks
- An ability to develop and understand multithreaded

Subject and code:PH 534.1 : WEB DESIGN WITH PHP and MYSQL

Course Outcomes:

Course Outcomes: The Candidate will be able

- To use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current professional and/or industry standards. Use critical thinking skills to design and create websites.
- To create effective scripts using JavaScript.
- To enhance the end user experience using JQuery.
- Students can be employed on entry-level jobs of PHP based web development in software industry
- To develop interactive and dynamic website using PHP and database connectivity.

Subject and code:PS 537.1 SOFTWARE ENGINEERING WITH UML

Course Outcomes:

Course outcomes: Upon Completion of this course, students should be able to:

- Plan and deliver an effective software engineering process, based on development lifecycle models.
- Make effective use of UML, along with design strategies such as defining a software architecture, separation of concerns and design patterns.
- Capture, document, analyze requirements and translate a requirements specification into an implementable design, a structured and organized process.
- Understanding the different system design concepts such as coupling, cohesion and architectural styles.
- Formulate a testing strategy for a software system, employing techniques such as unit testing, test driven development and functional testing.

Semester-II

Subject and code:PH 531.2 PROGRAMMING WITH PYTHON

Course Outcomes:

Course Outcomes: At the end of this course students would have learned

- To design and program Python applications, use lists, tuples, and dictionaries in Python programs.
- To identify Python object types, use indexing and slicing to access data in Python programs.
- To build and package Python modules for reusability and to read and write files in Python.
- To design object oriented programs with Python classes and use class inheritance in Python for reusability.
- To use exception handling in Python applications for error handling.

Subject and code:PH 532.2 MOBILE APPLICATION DEVELOPMENT WITH ANDROID

Course Outcomes:

Course Outcomes: Students must be able to

- Understand the architecture, working and environmental setup of Android
- Design and Implement simple GUI based Android Apps that handle user input and provide information
- Implement Android apps that are able to receive broadcasted messages, act as

content provider or receiver and run background services.

- Create Android Apps that can manipulate data from various data stores such as internal, external memory and also SQLite as a Database.
- Design and Work with advanced sensors of the phone and manipulate Telephony.

Subject and code: PS 534.2 E1 FOUNDATIONS OF DATA SCIENCE

Course Outcomes:

Course outcomes: On completion of the course the students will be able to

- Select appropriate statistical techniques for summarizing and displaying of data.
- Identify outliers and use the right techniques to treat them in order to give a better understanding of the data.
- Analyze and draw inferences from data using appropriate statistical methods.
- Perform correlation and regression, and be able to make predictions and interpret the results
- Identify the types of learning and apply the appropriate tools to derive information from the data.

Subject and code: PS 534.2 E2 DATA WAREHOUSING AND DATA MINING

Course Outcomes:

Course Outcomes: By the end of the module, the student should

- ☐ Understand and implement classical models and algorithms in data warehouses.
- ☐ Display a comprehensive understanding of different data mining tasks and the algorithms most appropriate for addressing them.
- ☐ Evaluate models/algorithms related to Association rule mining with respect to their accuracy.
- ☐ Perform a self directed piece of practical work that requires the application of data mining techniques in classification and prediction.
- ☐ Conceptualize a data mining solution to a practical problem in clustering and outlier analysis.

Subject and code: PS 535.2 E1 ARTIFICIAL INTELLIGENCE AND COGNITIVE COMPUTING

Course Outcomes:

Course Outcomes: By the end of the module, the student should be able

- To Design intelligent agents for problem solving, reasoning and planning.
- To implement AI systems with different approaches of knowledge representation, design AI systems with heuristic search techniques
- To implement AI systems using statistical and symbolic reasoning, designing AI models using Bayes rule
- Apply AI technique on current applications with cognitive psychology using connectionist approach
- To design applications using computational cognitive neuroscience by applying techniques of cognitive computing and neural network theory.

Subject and code: PS 535.2 E2 MACHINE LEARNING AND DEEP LEARNING

Course Outcomes:

Course Outcomes: By the end of the module, the student should be able

- To implement Machine Learning with Bayes algorithm, to work out the concept of dimensionality reduction using PCA & LDA
- To implement Machine Learning with SVM, Decision tree and clustering methods
- To use MLP, HMM for classification and also to measure the performance of the classification algorithm, to design models using reinforcement learning

- To implement CNN and RNN for Deep Learning models by applying all the methods for creating optimal model
- To implement Transfer learning and Auto encoders for Deep Learning models

Subject and code:PO 537.2 (E1): ENTERPRISE INFORMATION SYSTEMS

Course Outcomes:

- Course Outcomes : Upon successful completion of this course, a student will be able to:
- Understand the enterprise need of integrating information assets, and be able to articulate
 - the advantages and tradeoffs of different information integration designs of organizations.
 - Understand the key components of Enterprise Information Systems such as Enterprise
 - Resource Planning, Customer Relationship Management, Supplier Relationship
 - Management and Business Intelligence. | Understand the key issues in implementing and managing EIS.
 - Understand the emerging business models of enterprise system vendors

Subject and code:PO 537.2 (E2): MARKETING ANALYTICS

Course Outcomes:

- Course Outcomes: Students who complete this course will be able to
- Have a high- level understanding of the benefits and objectives of marketing analytics.
 - Apply metrics -driven techniques to improve marketing decisions.
 - Understand best practices through case studies.
 - Learn by doing through hands-on computer spreadsheet models and metric
 - Design and analyze appropriate predictive models.& apply statistical tools for analysis

Subject and code:Research Methodology and Ethics

Course Outcomes:

- Course Outcomes:
- Research output with philosophical base and greater relevance to the society
 - Quality research with scientific methodology
 - Production of good Research Reports
 - Original Research following ethical guidelines and practices in conducting the research and publication of papers.
 - More awareness on Intellectual property Rights and Patents.

Semester-III

Subject and code:PH531.3 CLOUD COMPUTING WITH AMAZON WEB SERVICES

Course Outcomes:

- Course Outcomes: By the end of the module, the student should be able
- Describe the key technologies, architecture, strengths, limitations and applications of cloud computing
 - Explain the types and service models of cloud and Understand security implications in cloud computing
 - Design Cloud Services and Set a private cloud
 - Create and automate infrastructure to design cost-effective, highly available applications
 - Integrate AWS services with your application to meet and exceed non-functional

requirements
Subject and code:PH 532.3: WEB TECHNOLOGIES and .NET FRAMEWORK
Course Outcomes:
<p>Course Outcomes: By the end of the module, the student should be able</p> <ul style="list-style-type: none"> •Learn to develop correct, well documented programs using C# programming language. •Create visually rich and attractive Web applications with ASP.NET controls and controls in the AJAX Control Toolkit •Display dynamic data from a data source by using Microsoft ADO.NET, LINQ and EF. •Create MVC Models and write code that implements business logic within Model methods, properties, and events.Dynamic web applications, create and consume web services,understand the Microsoft Web Technologies stack. •Write an application that can create, edit, and view data from a database using ASP.Net Core, and create Sing
Subject and code: PS 534.3 E1 INTERNET OF THINGS and APPLICATIONS
Course Outcomes:
<p>Course Outcomes – upon successful completion of this course, the participant will be able to:</p> <ul style="list-style-type: none"> • Understand why IoT is used and how it is implemented and how networks and communication is used to implement IoT • Understand how identity management models are used in IoT, also understand why trust management is important for IoT environment • Understand the use of protocols which are used in different layers and how it is combined with other protocols down the layers to carry out the communication • Understand how data is stored in cloud and how it is represented using different application to carry out or execute different data analytics tools • Understand the concepts of data science for IoT analytics, how to organize data for analytics, and how to get benefits from IoT analytical tools.
Subject and code: PS 534.3 E2 NATURAL LANGUAGE PROCESSING
Course Outcomes:
<p>Course Outcomes: upon successful completion of this course, the participant will be able to:</p> <ul style="list-style-type: none"> ☑Ability to create morphemes and perform morphological analysis. Construct simple DFA. Perform POS tagging ☑Ability to construct parse trees for sentences when CFG is given. Perform leftmost and rightmost derivations. Perform top-down and bottom-up parsing. Perform ambiguity analysis and word sense disambiguation. ☑Perform reference resolution on sentences. Differentiate Cohesion and Coherence. ☑Differentiate pipelined, interleaved and integrated architecture of NLG.
Subject and code: PS535.3 E1 BIG DATA ANALYTICS WITH SCALA AND SPARK
Course Outcomes:
<p>Course Outcomes: Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Understand what Functional programming is and will know why classical data analysis techniques are no longer adequate • Understand the benefits that Spark and Spark SQL offers for processing structured and unstructured data.

- Understand conceptually how Spark SQL is used for Data Exploration, Data Munging and Data Streaming.
- Understand how Spark can be used for Machine Learning.
- Understand the use of PySpark and Sparkr

Subject and code: PS 535.3 E2: BIG DATA ANALYTICS with MAP REDUCE & HADOOP

Course Outcomes:

- Course Outcomes : Upon Completion of the course, the students will be able to
- Identify and distinguish big data analytics applications from other applications and the use of Big Data.
 - Describe No SQL databases and understanding different concepts related to No SQL and its applications using MongoDB.
 - Understanding Hadoop and its advantage over the traditional database applications in solving practical problems
 - Writing programs using mapper and reducer.
 - Using Hive and Pig for analyzing and querying data and knowing the advantages over the traditional Data handling solutions.

Subject and code: PO537.3 E1 SOCIAL MEDIA ANALYTICS

Course Outcomes:

- Course Outcomes: Upon successful completion of this course, the student will be able to:
- Apply multiple quantitative and qualitative methods
 - Understand sources and limitations of web-based data
 - Perform social network analysis to identify important social actors, subgroups and network properties in social media.
 - Use appropriate information visualization technique to gain insights into large datasets
 - Apply best practices in Search Engine Optimization

Subject and code: PO537.3 E2 STREAMING ANALYTICS

Course Outcomes:

- Course Outcomes: Upon successful completion of this course, the student will be able to:
- Describe and use a wide variety of streaming analytics methods in a business or an industry.
 - Understand how analytics can be used in business development using Kafka and Flume.
 - Learn to use and to apply a selection of modern business analytics tools and software to solving real-world problems with real-world data
 - Demonstrate hands-on skills using visualization in applying business analytics
 - Demonstrate hands-on skills in applying analytics into real-world business using statistical approximation and sketching.

Semester-IV

Subject and code: DOMAIN KNOWLEDGE PROJECT

Course Outcomes:

- Learning objectives for a thesis are based on the objectives for Master of Science in Software Technology has Specific learning outcomes: for the student to demonstrate:
- Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work.

- Deeper knowledge of methods in the major subject/field of study.
- A capability to contribute to research and development work.
- The capability to use a holistic view to critically, independently and creatively identify, formulate and deal with complex issues.
- The capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate this work.
- The capability to create, analyse and critically evaluate different technical/architectural solutions.
- The capability to critically and systematically integrate knowledge.
- The capability to clearly present and discuss the conclusions as well as the knowledge and arguments that form the basis for these findings in written and spoken English.
- The capability to identify the issues that must be addressed within the framework of the specific thesis in order to take into consideration all relevant dimensions of sustainable development.
- A consciousness of the ethical aspects of research and development work.

Department Name:	P 540 M.Sc. (Analytical Chemistry)
PROGRAMME OUTCOMES	
<p>PO 1: Inculcate critical thinking to carry out scientific investigation objectively in industry and academia by following scientific approach to knowledge development.</p> <p>PO 2: Equip the student with necessary skills to analyse scientific problems, formulate hypothesis, evaluate and validate results, and draw conclusions from the data obtained</p> <p>PO 3: Equip the student with the knowledge for clear understanding of the subject related concepts to lead them for interdisciplinary and trans disciplinary research</p> <p>PO 4: Induce the sense of professional and ethical responsibility and enhance the cross cultural competency</p> <p>PO 5: Demonstrate an understanding of major concepts in all disciplines of chemistry</p> <p>PO 6: Get an awareness of the impact of chemistry on the environment, society, and other cultures outside the scientific community</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1: Apply advanced concepts of organic, analytical, physical and inorganic chemistry to solve complex problems of industry and academia</p> <p>PSO 2: Design experiments, analyse and interpret data to provide solutions to various industrial glitches by working in the pure, inter and multi-disciplinary areas of chemical sciences.</p> <p>PSO 3: Able to independently carry out research / investigation to solve practical problems and write / present a substantial technical report/document.</p> <p>PSO 4: Able to successfully prepare for the competitive examinations like CSIR-NET, GATE and State Level eligibility test for Lectureship</p> <p>PSO 5: Develop strong analytical skills and strong background in the Chemical sciences to join</p>	
Semester-1	

Subject and code: PH 541.1 : INORGANIC CHEMISTRY
Course Outcomes:
CO 1: Describe the types of bonds and molecular shape of compounds with emphasis on VSEPR, VB and MO theory of complexes. CO 2: Explain the chemistry of acids, bases, non-aqueous solvents and the concepts of hard and soft acids and bases CO 3: Discuss the properties of the non-transition elements like C, B and Si and their frameworks CO 4: Illustrate the properties of Nitrogen, Phosphorus, Sulphur and noble gas compounds.
Subject and code: PH 542.1 : ORGANIC CHEMISTRY
Course Outcomes:
CO 1: Explain the basic concepts of organic chemistry CO 2: Explain the reaction intermediates and mechanisms. CO 3: Demonstrate the importance of conformation and stereochemistry in understanding the
Subject and code: PH 543.1 : PHYSICAL CHEMISTRY
Course Outcomes:
CO 1: Understand the basic concepts of thermodynamics and its applications. CO 2: Gather the knowledge about chemical kinetics and its applications CO 3: Familiarize with the various concepts in heterogeneous catalysis. CO 4: Detail the study of the principle and applications of electrochemistry
Subject and code: PS 544.1 : PRINCIPLES OF ANALYTICAL CHEMISTRY & SEPARATION TECHNIQUES
Course Outcomes:
CO 1: Gain a domain knowledge about various sampling techniques and errors. CO 2: Evoke the fundamental concepts in different titration techniques CO 3: Understand the principle of different chromatography techniques and apply that knowledge for the separation and purification of different samples
Subject and code: PS 545.1 BIOORGANIC CHEMISTRY
Course Outcomes:
CO 1: Understand the chemical principles of living cells, their biomolecules and biocatalytic reactions. CO 2: Study the basic principles of nucleic acid chemistry. CO 3: Explain the structure determination, synthesis and classification of biomolecules like
Subject and code: PS 546.1 RESEARCH METHODOLOGY
Course Outcomes:
CO 1: Evaluate Research output with philosophical base and greater relevance to the society CO 2: Identify the parameters of Quality research with scientific methodology CO 3: Understand the concepts Original Research, ethical guidelines and practices in conducting the research and publication of papers. CO 4: Create awareness on Intellectual property Rights and Patents.
Subject and code: PS 547.1P : INORGANIC CHEMISTRY PRACTICALS – I

Course Outcomes:
CO 1: Estimate the quantity and quality of different compounds and metal ions using gravimetry, volumetry and complexometric techniques.
Subject and code: PS 548.1P : ORGANIC CHEMISTRY PRACTICALS – I
Course Outcomes:
CO 1: Carry out multi-step organic synthesis
Subject and code: PS 549.1P : PHYSICAL CHEMISTRY PRACTICALS – I
Course Outcomes:
CO 1: Carry out experiments related to viscometry, Polarimetry, Refractometry, Conductometry, Potentiometry and pH metry.
CO 2: Determine the K_a of various acids by different electroanalytical techniques.
Semester-2
Subject and code: PH 541.2: ADVANCED INORGANIC CHEMISTRY
Course Outcomes:
CO 1: Understand the Chemistry of d block elements, Lanthanides and Actinides and explain the magnetic and electronic properties of them
CO 2: Describe the VB and MO theory of complexes and electronic and bonding reactivities of transition metals
CO 3: Describe the basic concepts of organometallic chemistry and their bonding patterns especially with unsaturated ligands
CO 4: Explain the spectral and magnetic properties of metal complexes
Subject and code: PH 542.2: ADVANCED ORGANIC CHEMISTRY
Course Outcomes:
CO 1: Describe the mechanisms of different types organic reactions.
CO 2: Understand the chemistry of radical reactions and its applications.
CO 3: Understand the mechanism of additions to various Carbon based multiple bonds
CO 4: Achieve skills in constructing homo/heterocyclic rings of significant molecules
Subject and code: PH 543.2: ADVANCED PHYSICAL CHEMISTRY
Course Outcomes:
CO 1: Gather the knowledge in the Quantum Chemistry and its application
CO 2: Explain the approximation methods in quantum mechanics
CO 3: Describe the quantum mechanical explanation of chemical bonding
CO 4: Explain the relationship between microscopic properties of molecules with macroscopic
Subject and code: PS 544.2: MOLECULAR SYMMETRY AND MOLECULAR SPECTROSCOPY
Course Outcomes:
CO 1: Apply the principles of group theory in chemical bonding.
CO 2: Define aspects of specific spectroscopic techniques, applications of molecular symmetry in Microwave and Vibrational spectroscopy
CO 3: Define aspects of specific spectroscopic techniques, applications of molecular symmetry in Rotational and Raman spectroscopy
Subject and code: PS 545.2 : CHEMISTRY OF BIOMOLECULES
Course Outcomes:
CO 1: Explain the structure and role of biomolecules like peptide, proteins and lipids
CO 2: Understand the chemical principles of living cells, their biomolecules and biocatalytic

reactions.
CO 3: Detail the synthesis and stereochemistry of carbohydrate
Subject and code: PS 546.2P : INORGANIC CHEMISTRY PRACTICALS – II
Course Outcomes:
CO 1: Estimate binary mixtures of metallic ions in solution
CO 2: Analyse the presence of inorganic salts qualitatively
Subject and code: PS 547.2P : ORGANIC CHEMISTRY PRACTICALS – II
Course Outcomes:
CO 1: Separate and analyse the binary mixture of Organic Compounds
Subject and code: PS 548.2P : PHYSICAL CHEMISTRY PRACTICALS – II
Course Outcomes:
CO 1: Determine cryoscopic constants, dissociation constants and various other physical properties of compounds
CO 2: Carry out kinetic experiments to determine the order, rate of various chemical reactions.
Subject and code: PO 549.2- ANALYTICAL TECHNIQUES
Course Outcomes:
CO 1: Gain a domain knowledge about biomolecules and the chemistry related to it
CO 2: Understand different electro-analytical techniques
CO 3: Understand the chemistry of Polymers
Semester-III
Subject and code:
PH 541.3 :ORGANOMETALLIC, BIOINORGANIC AND COORDINATION CHEMISTRY
Course Outcomes:
CO 1: Describe the basic concepts, synthesis, reaction chemistry of organometallic compounds and the structure and bonding patterns.
CO 2: Detail the mechanism of different organometallic reactions and catalysis and their application as industrial catalysts.
CO 3: Understand the role and interaction of Metal ions in biological systems.
CO 4 : Understand the nomenclature, metal-ligand reactions and their mechanism and identify
Subject and code: PH 542.3: ELECTROANALYTICAL RADIOCHEMICAL AND THERMOANALYTICAL TECHNIQUES
Course Outcomes:
CO 1: Describe the principles of electrochemistry and applications of electromotive force.
CO 2: Explain the principles of irreversible thermodynamics and bioenergetics
CO 3: Demonstrate a systematic understanding of the key aspects of nuclear chemistry and their analytical applications.
CO 4 : Understand and apply various electro-analytical techniques in qualitative and quantitative analysis.
Subject and code: PS 543.3: MOLECULAR SPECTROSCOPY
Course Outcomes:
CO 1: Gather knowledge about various spectroscopic techniques such as IR, NMR, UV and Mass spectroscopy analysis.
CO 2: Understand theory and application to mass spectrometry, ultraviolet and visible

spectroscopy, infrared spectroscopy, nuclear magnetic resonance spectroscopy. CO 3: Apply NMR, IR, MS, UV-Vis spectroscopic techniques in solving structure of organic molecules
Subject and code: PS 544.3 : MEDICINAL CHEMISTRY
Course Outcomes:
CO 1: Explain the mechanism of drug action and drug designing. CO 2: Understand the classification, structure and mechanism of action of drugs. CO 3: Develop an understanding on various CNS depressants
Subject and code: PS 546.3P: COMPUTERS FOR CHEMISTS
Course Outcomes:
CO 1: Understand about the different operating systems and softwares CO 2: Get training on using subject specific softwares CO 3: Get a hands-on experience to use the relevant softwares
Subject and code: PS 545.3P: ANALYTICAL CHEMISTRY PRACTICALS – I
Course Outcomes:
CO 1: Analyze the common and rare cations in a mixture by different titration techniques. CO 2: Handle spectrophotometry for various determinations
Subject and code: PS 546.3P ANALYTICAL CHEMISTRY PRACTICALS – II
Course Outcomes:
CO 1: Have clear understanding of different analytical instruments. CO 2: Apply chromatographic techniques as analytical tool in chemistry.
Subject and code: PO547.3 OPTICAL METHODS OF ANALYSIS
Course Outcomes:
CO 1: Understand the basic principles, working and application of atomic absorption spectroscopy CO 2: Will be able to describe the physical principles of photochemistry and explain the methods of fluorescence spectroscopy. CO 3: To learn and analyze the optical properties of solids using various instrumentation techniques.
Semester-IV
Subject and code: PH 541.4: ORGANIC SYNTHETIC METHODS
Course Outcomes:
CO 1: Understand and apply the various reagents in organic synthesis and design organic synthetic reactions. CO 2: Describe the applications of oxidation and reduction techniques in organic syntheses. CO 3: Prefer suitable reagent for important reactions/building appropriate bonds. CO 4 : Understand the principles and applications of protecting groups in chemistry
Subject and code: PH 542.4: SPECTROSCOPIC METHODS OF ANALYSIS
Course Outcomes:
CO 1: Learn the fundamental principles of instrumental measurements, CO 2: Develop and understand the basic principles and application of Electron spin resonance

(ESR) spectroscopy, Photoelectron, NQR and Mossbauer spectroscopy for the structural elucidation of compounds.

CO 3: Understand the underlying principle of different biophysical methods and will be able to describe the physical principles of photochemistry

Subject and code: PH 543.4: CHEMISTRY OF POLYMERS AND NATURAL PRODUCTS

Course Outcomes:

CO 1: Understand preparation methods, property uses of some industrially important polymers.

CO 2: Describe the morphology, structure thermal, physical, and mechanical properties of polymers.

CO 3: Gather knowledge about the classification, isolation techniques, understand the various synthetic approaches in Natural Products synthesis structural elucidation of natural products.

CO 4: Explain the basics and applications of concerted reactions and pericyclic reactions. Develop an in-depth knowledge of the basics and applications with mechanistic understanding in concerted reactions apply those in the synthesis of organic compounds.

Subject and code: PH 544.4P ANALYTICAL CHEMISTRY PRACTICALS – IV

Course Outcomes:

CO 1: Understand of different analytical instruments.

CO 2: Experimental verification of fundamental concept

CO 3: Application of spectroscopic techniques as analytical tool in chemistry

Subject and code: PH 546.4: APPLIED ANALYSIS AND AUTOMATION

Course Outcomes:

CO 1: To be able to determine the reaction rates

CO 2: Be able to describe the chemical and biochemical properties of major food constituents,

poisonous materials and have an overview of the automated systems

CO 3: An ability to ensure the quality of production processes within the field of chemistry so as to guarantee effective output.

Subject and code: PS 547.4 : RADIATION AND PHOTOCHEMISTRY

Course Outcomes:

CO 1: Demonstrate a systematic understanding of the key aspects of nuclear chemistry and their analytical applications

CO 2: Acquire the knowledge of nucleus, nuclear reaction, radioactive techniques and application of radioisotopes.

CO 3: Describe the methods of measurements and kinetics of photochemical reactions

CO 4: Discuss the principle of absorption and emission of radiation and explain the mechanism of Jablonski diagram

Department Name:

P 550 M.Sc. (Corporate Psychology)

PROGRAMME OUTCOMES

PO1 Prepare human resource professionals /Corporate psychologists with a multidisciplinary approach to address legal, ethical and multicultural issues and

challenges in the corporate.
 PO2 Develop leadership skills and core competencies required to stay ahead in the corporate / industry
 PO3 Develop employability skills to manage global human resources
 PO4 Contribute to employee performance, organizational effectiveness through a scientist practitioner approach
 PO5 Build organizations by focusing on people, process, products and profits.
 PO6 Engage actively in socially responsible activities to promote health, harmony, human welfare and well- being in the society.
 PO7 Adopt and Display values of ethics and integrity in their organizational practices reflecting the core values of Jesuit education.

PROGRAMME SPECIFIC OUTCOMES

PSO 1 Demonstrate the ability to think critically and scientifically about human behaviour and apply this knowledge specifically in the work context.
 PSO 2 Competence in understanding and developing scientific and need based interventions to enhance human resource in the corporate sector.
 PSO 3 Design, develop and conduct training programs to enhance human resource in Organizations.
 PSO 4 Assess, Design and Conduct need based research in the organizational context.
 PSO 5 Examine, explain, recognize, and address multi-cultural issues in the organizations using proven theories and models.
 PSO 6 Design, Construct and standardize psychometric tools applicable to workplace setting.
 PSO 7 Explore, integrate, assess, learn and apply the skills and knowledge in real time through Internship in organizations.

Subject and code: PH 551.1 PSYCHOLOGICAL PROCESSES (Hard Core)

Course Outcomes:

CO 1 Understand the basic psychological processes underlying behavior.
 CO 2 Knowledge of how information is organized, synthesized and integrated.
 CO 3 Identify and manage emotions both at intra and interpersonal level to enhance the quality of relationship in personal and professional life
 CO 4 Apply the principles of learning to modify behaviour and enhance workplace productivity.
 CO 5 Recognize the subtle social forces at work like conformity, group influence, attitudinal and behavioural manifestations of social relations.
 CO 6 Analyse the dynamics of human behavior and individual differences in the work context.
 CO7 Application of the psychological concepts to understand real time work place issues .

Subject and code: PH 552.1 PSYCHOLOGICAL ASSESSMENT (Hard Core)

Course Outcomes:

CO 1 Understand the technical, ethical and legal foundations of psychological tests.
 CO 2 Compare the different methods of assessment and learn to use them effectively for the purpose of assessment.

CO 3 Become aware of multicultural concerns related to testing, and integrate test scores into a meaningful communication in the form of a psychological report.

CO 4 Understand the basic statistical concepts which forms the basis for psychometric tool development

CO 5 Competence to develop a Psychological tool

CO 6 Critique psychometric instruments with respect to normative data provided in the technical manual

CO 7 Competence to assess workplace behavior and write reports of psychological assessment.

Subject and code: PH 553.1 HUMAN RESOURCE MANAGEMENT (Hard Core)

Course Outcomes:

CO 1 Understand the significance of Human Resource Management in growing competitive economy.

CO 2 Use the tools and techniques of Human resource management in the selection and recruitment process

CO 3 Explain the process of career development and succession planning

CO 4 Analyze the methods of performance appraisal and errors in evaluation

CO 5 Assess training needs and plan training programs

CO 6 Explain and suggest relevant compensation methods in organizations

CO 7 Apply principles of Psychology to enhance human resource in organizations

Subject and code: CPH 554 .1P PSYCHOMETRIC TESTING - I (Hard Core)

Course Outcomes:

CO1 : Describe the history and process of test construction of different psychological tests

CO2 : Assess the various psychological constructs or variables as applicable to workplace set up

: Measure the components of personality and compare it with the normative data in the organizational con

CO4 : Apply the required test in the workplace context to determine the quality of work life balance

CO5 : Use the tests to assess and understand the organizational climate of the workplace

CO6 : Determine the test to assess and measure specific aspect related to individual or workplace

Subject and code: PH 555.1P INTERPERSONAL SKILLS TRAINING - I (Hard Core)

Course Outcomes:

CO 1 Have a positive attitude towards work and relationship

CO 2 Articulate their thoughts verbally and in writing

CO 3 Develop skill sets necessary for good interpersonal communication

CO 4 Become reliable, responsible and empathetic leaders who will align with the organizational goals

CO 5 Impart life skills training effectively in the organizations and social situations

CO 6 Develop need-based modules for the corporate

CO 7 Trained to be trainers

Subject and code: PS 556.1 ORGANIZATIONAL PSYCHOLOGY (Soft Core)**Course Outcomes:**

- CO 1 Understand the complicated systems of individual and group psychological processes involved
in the world of work
- CO 2 Connect and apply the basic principles of Industrial / Organizational Psychology to Personnel and
Human Resource management within organizations
- CO 3 Adopt a scientist practitioner approach in organizations, design and conduct need based research.
- CO 4 Analyze the relevance of motivation theories and suggest interventions to enhance motivation in
Employees
- CO 5 Identify the cause of counterproductive behaviour and suggest strategies to promote productive
behaviour
- CO 6 Enhance worker wellbeing by identifying and addressing maladaptive behaviours at the workplace.

Semester-II**Subject and code: PH 551.2 TRAINING AND DEVELOPMENT (Hard Core)****Course Outcomes:**

- CO 1 Describe the importance and need of training and development in the organization and challenges associated with implementation of training programmes
- CO 2 Assess the training needs in the organization at different levels and explaining the process of training needs assessment
- CO 3 Learn the process of training design and analyse the effectiveness of various methods to deliver the training programme
- CO 4 Analyze the various methods of training evaluation and determine the cost and benefits of training to the organization
- CO 5 Knowledge of strategic training programme and assessing the requirement of different strategic training methods and management development programmes
- CO 6 Explain different models of training department and understand its implications in the future of training in the organization
- CO 7 Compare the benefits and limitations of inbuilt training program and outsourcing of training in the Organization
- CO 8 Design need-based training Programs

Subject and code: PH 552.2 CORPORATE CULTURE AND DIVERSITY (Hard Core)**Course Outcomes:**

- CO 1 Understand the importance of culture in organizations
- CO 2 Connect the concept of culture with corporate firms and cross-cultural aspects
- CO 3 Identify and evaluate the underlying psychological processes involved in organizations in the changing cultural context
- CO 4 Analyze the mechanism of communication in cross cultural corporate setup and the impact of corporate culture upon organizational communication
- CO 5 Compare the global teams in connection with ethics in international context
- CO 6 Evaluate the concept of foreign assignments and challenges.
- CO 7 Learn strategies to manage cultural diversity in organizations

Subject and code: PS 553.2 STATISTICS AND RESEARCH METHODOLOGY**Course Outcomes:**

- CO 1 Competent knowledge base in scientific thinking and Scientific method as a model for research
- CO 2 Strong theoretical foundations in quantitative and qualitative research methods.
- CO 3 Understand, describe and use the various traditions of research methodologies in organizational psychology and engage in context based multidisciplinary research.
- CO 4 Competent in writing research proposal, design and conduct research
- CO 5 Analyses of data using advanced software and statistical tools.
- CO 6 Critically analyze the findings, Report the findings, and implement them.

Subject and code:PS 554.2 ORGANISATIONAL BEHAVIOUR (Soft Core)**Course Outcomes:**

- CO 1 Manage and develop human resources at work.
- CO 2 Understand work place behavior through micro and macro perspectives in organizations.
- CO 3 Discuss strategies to manage the workforce to achieve greater results.
- CO 4 Assess the impact of power and politics on employee's behaviour at the workplace
- CO 5 Describe the various types of organizational structure and identify the limitations and strengths of different organizational structures
- CO 6 Develop the ability and skill to identify and modify conflict causing situations at the workplace and strategies of negotiation.

Subject and code: PS 555.2 MANAGERIAL ECONOMICS (Soft Core)**Course Outcomes:**

- CO 1 Understand Fundamentals of Economics and its relation to complex business realities
- CO 2 Associate the current economic phenomena with existing theory and contemporary economic issues.
- CO 3 Explain the cost of choices and trade-offs and demonstrate how changes in the determinants of supply and demand affect the equilibrium price and quantity of a good or service.
- CO 4 Enumerate short run and long run costs, associate economies and dis economies of scale to returns to scale.
- Co 5 Calculate and graphically illustrate the firms fixed, variable, average marginal and total cost, and determining the profit maximizing output level.
- CO 6 Apply the principle of macroeconomics in explaining the behavior of macro-economic variables at national as well as global level.

Subject and code:PS 556.2P PSYCHOMETRIC TESTING II (SOFT Core)**Course Outcomes:**

- CO 1 Describe the history and process of test construction of different psychological tests
- CO 2 Familiarize with the various psychological constructs applicable to workplace set up
- CO 3 Apply test in the workplace context to determine motivation, leadership, strategic talent management, human resource development and job involvement.
- CO 4 Prepared to handle HR issues through simulation exercises in collective bargaining, in-basket Exercises, leaderless group discussion.
- CO 5 Administer psychological tests, analyze and write test reports.

CO 6 Use psychometric tools to assess employees at different levels based on the need of the organizations

Subject and code: PS 557.2P INTERPERSONAL SKILLS TRAINING LAB II (SOFT Core)

Course Outcomes:

CO 1 Have a positive attitude towards work and relationship

CO 2 Articulate their thoughts verbally and in writing

CO 3 Develop skill sets like assertiveness, conflict resolution, team building necessary for good

interpersonal communication

CO 4 Become reliable, responsible and empathetic leaders who will align with the organizational

goals

CO 5 Impart life skills training effectively in the organizations and social situations

CO 6 Develop need-based modules for the corporate

CO 7 Trained to be trainers

Subject and code: PO 558.2 BEHAVIOUR AND SOCIETY (Elective)

Course Outcomes:

CO 1 Understand how people think, feel and act in the social context

CO 2 Describe how individuals think about, influence and relate to one another

CO 3 Analyse the outcome of social interactions on impression formation, attitude, prejudice,

romantic attraction, friendship and aggression

CO 4 Discuss and analyze the reasons for social conflicts and steps to alleviate conflicts

CO 5 Assess the reasons for prosocial behaviour and strategies to enhance helping behaviour

CO 6 Apply the principles of social psychology to challenge prejudice, discrimination, stereotype attitudes and promote peace

Semester-III

Subject and code: PH 551.3 CORPORATE LEADERSHIP (Hard Core)

Course Outcomes:

CO 1 Understand leadership and various leadership processes

CO 2 Learn various leadership models and their efficiency

CO 3 Compare different leadership styles, theories, and business leaders

CO 4 Analyze changing role of a leader and the relationships between leader –followers and leader - situation

CO 5 Evaluate ethical leadership and its impact on society

CO 6 Challenge Gender stereotypes and accept the role and contributions of women corporate leaders

Subject and code:

PH 552.3 ORGANIZATIONAL CHANGE AND DEVELOPMENT (Hard Core)

Course Outcomes:

CO1 Synthesize theories and models of organisational behaviour, organisational change and

development and their critiques

CO 2 Identify and describe the historical and contemporary transformations impacting the

workplace and how those factors impact organizations and their work

CO3 Apply principles of systems thinking and relevant theories that are foundational to organizational change, current research concerning individuals, groups, and organizations to the process of change

CO 4 Recognize common symptoms and reactions to change in the workplace and recommended interventions to address the reactions/resistance

CO 5 Critique the range of change interventions in relation to their appropriateness to a range of research and evaluate critically the impact organisational change interventions at all levels of an organisation

CO 6 Evaluate and assess an organizational change program & Develop an awareness of influencing and facilitating change

CO 7 Design and plan the implementation of multiple OD interventions & enact human relations principles in the change process

CO 8 Understanding the impact of technological interventions and the way it facilitates change

Subject and code: PS 553.3 CORPORATE REPORTING AND ACCOUNTABILITY (Soft Core)

Course Outcomes:

CO 1 Understand the basics of accounting with practical experience.

CO 2 Assess various financial statements and its applicability in corporate sector.

CO 3 Analyze various Managerial accounting tools with practical knowledge.

CO 4 Understand financial reporting and its relevance in corporate accountability.

CO 5 Examine the various psychological factors influencing accounting scams with case analysis.

CO 6 Assess corporate accountability with relevant financial and managerial accounting tools.

Subject and code: PS 554.3 CORPORATE ETHICS AND GOVERNANCE (Soft Core)

Course Outcomes:

CO 1 Understand the basics of ethics, ethical dilemma and concepts of corporate Governance.

CO 2 Discuss the role of ethics in different departments in corporate setup.

CO 3 Evaluate and develop CSR models and practice in professional lives.

CO 4 Discuss, analyze and apply the various models of governance

CO 5 Analyze corporate governance practice in India and internationally.

CO 6 Demonstrate the ability to apply the core principles of governance like accountability, responsibility and transparency.

Subject and code: PS 555.3 INDUSTRIAL RELATIONS AND LABOUR LAWS

Course Outcomes:

CO 1 Understand the evolution and development of Industrial Relations and the history of enactments of Labour laws in India.

CO 2 Describe the different roles of stake holders in Industrial Relations in India.

CO 3 Explain the causes of industrial conflicts and the role of various stake holders in resolving industrial Conflicts

CO 4 Aware of the statutory provisions for working conditions, health, and safety of workforce in India and provisions relating to the Trade unions, retrenchment, lay-offs, and lockouts

CO 5 Prepare payroll and monitor social security measures.
Subject and code: PS 556.3 MARKET BEHAVIOUR AND ANALYSIS (soft core)
Course Outcomes:
CO 1 Understand the behavior of consumers within the marketing system in a society CO 2 Analyze the underlying psychosocial processes involved in consumer behavior CO 3 Explain the different consumer decision making models, its uses and limitations. CO 4 Aware of ethical considerations while influencing the buyers' decisions to acquire things .CO 5 Understand and analyse brand personality image through personality theories CO 6 Apply the understanding of consumer decision making process to enhance sales
Subject and code:
PS 557.3P CORPORATE COUNSELLING (Soft Core)
Course Outcomes:
CO 1 Understand the need for Employee counselling and learn the working of employee Assistance Programs in organizations and its limitations CO 2 Develop core conditions and skills in counselling (both basic and advanced) by Practicing hypothetical case scenarios. CO 3 Compare and use different counselling models to suit the issues and the needs of the client CO 4 Use Transactional analysis and Rational emotive cognitive behaviour therapeutic techniques CO 5 Conduct counselling sessions independently, identify addictive behaviors and initiate the process of referrals for admission to hospitals and rehabilitation centers. CO 6 Conduct psycho education sessions to maintain psychological and social well-being of employees CO 7 Follow the ethical code of conduct of APA while conducting counselling sessions.
Subject and code:
PS 558.3P CORPORATE SELECTION AND DEVELOPMENT (Soft Core)
Course Outcomes:
CO 1 Understand the role of HR department/HR professional in the organization CO 2 Learn the HR cycle from Recruitment to exit interview CO 3 Compare the best HR practices and strategies applicable to different industries CO 4 Trained to recruit, retain and manage talent, as an entry level HR professional. CO 5 Apply the knowledge gained in the entire course to practical use. (HRM, Labour Laws, Organization Behaviour , Training and Development,
Subject and code: PO 559.3 Basic Counseling Skills (Open Elective)
Course Outcomes:
CO 1 Describe the difference between counselling and other forms of communication CO 2 Compare the application of different Psychological theories in counselling CO 3 Practice and adopt the skills required for better communication CO 4 Describe the stages involved in the process of counselling CO 5 Challenge and embrace universal human values for better interpersonal relations. CO 6 Incorporate Counselling skills in everyday interaction.
Semester-IV
Subject and code: DISSERTATION
Course Outcomes:

- CO 1 Apply knowledge of psychological research in the field of human resource management
- CO 2 Develop research skills in organizational research
- CO 3 Competent to identify research problems in the field of corporate psychology
- CO 4 Conduct need based organizational research (Evidence based research)
- CO 5 Suggest research-based interventions to real time organizational issues.

Subject and code: INTERNSHIP

Course Outcomes:

- CO 1 Practical training enables the trainees to achieve high level of competency and skill to work in organizations
- CO 2 Develop an appreciation for the linkage between organization and its macro environment
- CO 3 On the job training exposure in HR practices in different types of organizations so as to reduce the gap between theory and practice
- CO 4 Apply, evaluate and debate theory and practice of psychological principles and Human resource Management in organizations.
- CO 5 Job Ready and opportunity for employment.

Department Name:	P 560 M.Sc. (Mathematics)
-------------------------	----------------------------------

PROGRAMME OUTCOMES

- PO1 Understand the fundamental axioms in Mathematics and develop problem solving skills.
- PO2 Develop analytical thinking and logical reasoning.
- PO3 Pursue careers in academia, industry and the other areas of Mathematics.
- PO4 Apply knowledge of Mathematics in all fields of learning including higher research and its extensions.
- PO5 Crack lectureship and fellowship exams approved by UGC like CSIR-NET, KSET, GATE etc.

PROGRAMME SPECIFIC OUTCOMES

- On completion of 2 years M.Sc Mathematics programme, student will be able to
- PSO1 Understand formal mathematical definitions, concepts and apply them to prove statements in Analysis
 - PSO2 Develop problem solving skills using Matrix Theory in Linear Algebra and will be able to apply in other fields.
 - PSO3 Understand the concepts of groups, rings, fields and other algebraic structures.
 - PSO4 Understand the importance and applications of Operations Research to find solutions to real life problems.
 - PSO5 Understand various properties of topological spaces and be able to prove Lindelof's theorem, Urysohn's Lemma, Tietze Extension theorem, etc.
 - PSO6 Understand the concept of Graphs and its wide range of applications in physical, biological, social and information systems
 - PSO7 Learn techniques of Complex Analysis, describe domains and compute limits in the complex plane, use the Cauchy-Riemann equations to obtain the derivative of complex functions, evaluate integrals using Residue theorem.

PSO8 Apply the fundamental concepts of Numerical Analysis, Ordinary Differential Equations and Partial Differential Equations

PSO9 Understand the fundamental applications of Functional Analysis and the concepts associated with the dual of a linear space.

PSO10 To solve problems using FOSS and prepare documents using Latex software which will be very useful for their research programs

Subject and code: PH 561.1 Algebra I

Course Outcomes:

- Identify the concept of Normal groups and Quotients groups.
- Investigate symmetry using group theory.
- Analyze Permutation groups and counting principle.
- Perform computations in symmetric groups
- Explain Sylow theorem and its applications.
- Provide information on ideals and Quotient rings, Field of Quotient of an integral domain

Subject and code: PH 562.1 Linear Algebra I

Course Outcomes:

- A student will be able to
- gain knowledge of theory of matrices, and their operations
- solve linear system of equations
- learn the concepts of subspace, basis, linear independence, dimension of vector spaces and linear transformations
- understand the concept of Eigen values, eigen vectors understand the concept of diagonalization of matrices solve system of differential equations using matrix theory and compute matrix exponentials

Subject and code: PH 563.1 Real Analysis I

Course Outcomes:

- Understand basic properties of \mathbb{R} , such as its characterization as a complete ordered field, Archimedean Property, density of \mathbb{Q} , countability and uncountability of sets.
- Classify and explain open and closed sets, limit points, compactness, connectedness etc. in a metric space.
- Use the definitions of convergence as they apply to sequences and series.
- Determine the continuity of functions in metric spaces
- Find the derivative of functions defined on subsets of the real line.
- Understand the differentiation of vector valued functions

Subject and code: PS 564.1 Graph Theory

Course Outcomes:

- After completing this course, the student will be able to:
- Write precise and accurate mathematical definitions of basics concepts in graph theory.
- Study the properties of trees and connectivity.
- Apply results to identify both Eulerian graphs and Hamiltonian graphs.
- Understand the concepts Planarity including Euler identity.
- Discuss and understand the importance of Coloring.
- Understand and apply various proof techniques in proving theorems in graph

theory.
Subject and code: PS 565.1 Fluid Mechanics
Course Outcomes:
<p>After completing this course, the student will be able to:</p> <ul style="list-style-type: none"> • the types of fluid flows, and understand the basic laws • the principles and phenomena in the area of fluid mechanics • derive Euler's equation of Motion and deduce Bernoulli's equations • to solve problems related to kinematics and dynamics of fluids, losses in a flow system, flow • through pipes and flow past immersed bodies
Subject and code: PS 566.1 OPERATIONS RESEARCH
Course Outcomes:
<p>On completion of this course students should be able to:</p> <ul style="list-style-type: none"> • Define and formulate linear programming problems and appreciate their limitations. • Solve linear programming problems using appropriate techniques and interpret the results obtained. • Explain the primal-dual relationship. • Develop mathematical skills to analyse and solve transportation and assignment models • arising from a wide range of applications. • Understand the concept of game theory and learn its applications in different social situations.
Subject and code: PS 567.1 Ordinary Differential Equations
Course Outcomes:
<ul style="list-style-type: none"> • Use the Wronskian to determine if a set of functions is linearly independent, construct a second solution to a second order differential equation by reduction of order • Find the complete solution of a homogeneous differential equation with constant coefficients by examining the characteristic equation and its roots. • Find the complete solution of a nonhomogeneous differential equation with constant coefficients by the method of undetermined coefficients and by the method of variation of parameters. • Solve basic application problems described by second order linear differential equations with constant coefficients. • Identify ordinary and singular points and find power series solutions about ordinary points and singular points.
Semester-II
Subject and code: PH 561.2 Algebra II
Course Outcomes:
<p>On completion of this course student should be able to:</p> <ul style="list-style-type: none"> • Understand the notion of irreducibility, primes and unique factorization Derive and apply Gauss Lemma, Eisenstein criterion for irreducibility of polynomials. • Understand the concept of Factorization and ideal theory in the polynomial ring, the structure of Primitive polynomial • Explain the concepts of Field extensions and characterization of finite normal

- extensions as splitting field.
- Understand the structure and construction of finite fields
- Analyze splitting fields, Galois extensions and Galois groups

Subject and code: PH 562.2 Real Analysis II

Course Outcomes:

Upon completion of this course, the student will be able to:

- Understand the definition of integrals and their properties
- Determine the Riemann-Stieltjes integrability of a bounded function and prove a selection of theorems concerning integration
- Recognize the difference between pointwise and uniform convergence of sequences and series of functions.
- Illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability and integrability.
- Evaluate improper integrals
- To gain knowledge on functions of several variables -The contraction principle, inverse function theorem and implicit function theorem.

Subject and code: PS 563.2 Research Methodology and Ethics

Course Outcomes:

- Outcome of the Paper:
- Quality research with scientific methodology
- Production of good Research Reports
- Original Research following ethical guidelines and practices in conducting the research and publication of papers.
- More awareness on Intellectual property Rights and Patents.

Subject and code: PS 564.2 Linear Algebra II

Course Outcomes:

Course outcomes:

- Student will be able to
- Understand the concept of bilinear forms on vector spaces
- Derive spectral theorems for various types of operators on vector spaces
- Explain the theory of modules
- Apply the theory in diagonalization of matrices over rings

Subject and code: PS 565.2 Lattice

Course Outcomes:

On completion of the course the student should be able to:

- understand the concept of Partially ordered sets and Their Properties.
- identify Lattices as posets and as Algebraic Structures and explain the theory of lattices in general.
- explain the concept of Complete Lattices and understand their properties.
- explain the concept of Modular and Distributive Lattices.

Subject and code: PS 566.2P Computational Lab -1

Course Outcomes:
<p>Course outcomes:</p> <ul style="list-style-type: none"> • Upon completion of the course student will be able to: • understand the usefulness of FOSS in Mathematical computations • solve problems in matrix theory using FOSS • do computations with algebraic structures such as groups, rings and fields with the aid of FOSS • test the continuity, differentiability of functions and evaluate limits
Subject and code: PO 567.2 Basic Tools in Mathematics (OE)
Course Outcomes:
<p>Upon completion of the course student will be able to:</p> <ul style="list-style-type: none"> • know about the number system, countability and uncountability of sets • use the definitions of convergence as they apply to sequences and series • determine the limits, continuity and differentiability of functions defined on subsets of the real line. • Know about optimization of functions of one variable • solve system of linear equations using Matrix theory • compute eigen values and eigen vectors
Semester-III
Subject and code: PH 561.3 Complex Analysis I
Course Outcomes:
<p>Upon completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Represent complex numbers algebraically and geometrically • Define and analyze limits and continuity for complex functions. • Apply the concept and consequences of analyticity and the Cauchy-Riemann equations • Apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula • To classify singularities and poles
Subject and code: PH 562.3 Topology
Course Outcomes:
<p>Upon completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Define a topology , a basis for a topology and various types of topologies • To construct topological spaces from metric spaces. • Gains knowledge on general properties of neighborhoods, open sets, closed sets, <ul style="list-style-type: none"> ○ basis and sub-basis. • Apply the properties of open sets, closed sets, interior points, accumulation points and derived sets in deriving the proofs of various theorems. • Understand the concepts and properties of compact and connected topological spaces. • Gain knowledge on the concepts of countable spaces and separable spaces.
Subject and code: PH 563.3 Numerical Analysis with Computational Lab
Course Outcomes:
<p>On completion of this course the student should be able to:</p> <ul style="list-style-type: none"> • Apply appropriate algorithms to solve selected problems, both manually and by

<p>writing computer programs.</p> <ul style="list-style-type: none"> • Compare different algorithms with respect to accuracy and efficiency of solution. • Analyze the errors obtained in the numerical solution of problems. • Demonstrate the use of interpolation methods to find intermediate values in given graphical and/or tabulated data. • Using appropriate numerical methods, determine approximate solutions for problems of • differentiation and integration • Using appropriate numerical methods, determine approximate solutions to ordinary differential equations.
Subject and code: PS 564.3 Commutative Algebra
Course Outcomes:
<p>The student will learn</p> <ul style="list-style-type: none"> • basic definitions concerning elements in rings, classes of rings, and ideals in commutative rings. • constructions of rings of fractions and modules of fractions, localization at prime ideals • the concept of Noetherian rings and Hilbert basis theorem. • the primary decomposition of ideals in Noetherian rings.
Subject and code: PS 565.3 Multivariate Calculus and Geometry
Course Outcomes:
<p>On completion the student should be able to:</p> <ul style="list-style-type: none"> • account for important theorems and concepts in multivariate analysis. • account for the most common multivariate methods. • explain the geometry of curves on \mathbb{R}^3. • explain the geometry of surfaces on \mathbb{R}^3.
Subject and code: PS 566.3 Probability Theory
Course Outcomes:
<p>Course outcomes: A student will be able to</p> <ul style="list-style-type: none"> • Develop problem-solving techniques needed to accurately calculate probabilities • Apply problem-solving techniques to solving real-world events. • Understand the properties of discrete and continuous random variables with their joint, marginal, and conditional distributions • Apply selected probability distributions to solve problems.
Subject and code: PO 567.3 Differential Equations and Applications (OE)
Course Outcomes:
<p>Upon completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Find solution of first order and second order ordinary differential equations using different methods. • Apply different techniques to solve differential equations in Applied Mathematics. • Find solution of first order and second order partial differential equations using different methods. • Find solution of wave equation and Heat equation.
Semester-IV

Subject and code: PH 561.4 Measure Theory and Integration**Course Outcomes:**

On completion the student should be able to:

- give a more rigorous introduction to the theory of measure.
- Understand the notions of measurable sets and functions
- develop the ideas of Lebesgue integration and its properties.
- identify measurable functions.
- construct the Lebesgue integral and understand properties of the Lebesgue integral.
- Learn inequalities in L^p Spaces, signed measures and their derivatives

Subject and code: PH 562.4 Complex Analysis II**Course Outcomes:**

Upon completion of this course, the student will be able to:

- To understand and apply results on analytic, harmonic and entire functions.
- Gain knowledge on simply connected and multiply connected regions
- Represent functions as Taylor, power and Laurent series,
- Classify singularities and poles, find residues
- Evaluate complex integrals using the residue theorem.
- Gain knowledge on infinite products, canonical products and Gamma function.

Subject and code: PH 563.4 Project Work**Course Outcomes:**

- Upon completion of the course student will be able to:
- understand the usefulness of FOSS in Mathematical computations
- solve differential equations using FOSS
- classify second order PDE's
- Solve problems in complex analysis effectively using
- FOSS

Subject and code: PS 564.4 Functional Analysis**Course Outcomes:**

- Upon completion of this course, the student will be able to:
- explain the fundamental concepts of functional analysis.
- understand the definitions of linear functional and prove theorems such as the Hahn- Banach theorem, Open Mapping theorem and Uniform Boundedness Principle.
- define linear operators, self-adjoint, isometric and unitary operators on Hilbert spaces
- explain the concept of the spectrum of a bounded linear operator.

Subject and code: PS 565.4 Partial Differential Equations**Course Outcomes:**

- Study surfaces and curves in three-dimension space.
- Classify partial differential equations and transform into canonical form
- Solve linear partial differential equations of both first and second order
- Analyze the origin of first order partial differential equations and solving them using Charpit's method
- apply partial derivative equation techniques to predict the behavior of certain

phenomena.
Subject and code: PS 566.4 Algebraic Number Theory
Course Outcomes:
<ul style="list-style-type: none"> • Define and interpret the concepts of congruence, and use the theory of congruences in applications. • Prove and apply properties of multiplicative functions such as the Euler phi-function and of quadratic residues. • Apply the Law of Quadratic Reciprocity and other methods to classify numbers as quadratic residues, and quadratic non-residues • To study the number theoretic applications of unique factorization and solving some Diophantine equations • Factorization of ideals in Dedekind domains
Subject and code: PS 567.4 Cryptography
Course Outcomes:
<ul style="list-style-type: none"> • Upon completion of this course, the student will be able to: • Have knowledge on fundamentals of number theory. • Understand the operations with congruences, linear and non-linear congruence equations. • Understand basics of Cryptography and Network Security. • Be able to secure a message over insecure channel by various means. • Learn about how to maintain the Confidentiality, Integrity and Availability of data. • Understand various protocols for network security to protect against the threats in the networks.
Subject and code: PS 568.4 Distribution Theory
Course Outcomes:
<ul style="list-style-type: none"> • Demonstrate the random variables and its functions • Infer the expectations for random variable functions and generating functions. • Demonstrate various discrete and continuous distributions and their usage • Study Marginal and conditional distributions. • The Poisson Distribution and The Gamma and Chi-square distributions to solve problems. • Study the t & F distributions and their applications.
Subject and code: PS 569.4P Computational Lab -2
Course Outcomes:
<ul style="list-style-type: none"> • Upon completion of the course student will be able to: • understand the usefulness of FOSS in Mathematical computations • solve differential equations using FOSS • classify second order PDE's • Solve problems in complex analysis effectively using • FOSS

Department Name:	P 570 M.Sc. (Physics)
PROGRAMME OUTCOMES	

PO 1 : Acquire a fundamental/systematic or coherent understanding of the academic field of Physics, its different learning areas and applications in basic Physics like Quantum Mechanics, Astrophysics, Materials Science, Nuclear and Particle Physics, Condensed Matter Physics, Atomic and Molecular Physics, Mathematical Physics, Analytical Dynamics, Space Sciences, and its relevance with related disciplinary areas/subjects like Chemistry, Mathematics, Life Sciences, Environmental Sciences, Atmospheric Physics, Computer Sciences, Information Technology; procedural knowledge that creates different types of professionals related to the disciplinary/subject area of Physics, including professionals engaged in research and development, teaching and government/public service; skills in areas related to one's specialization area within the disciplinary/subject area and the current and emerging developments in the field of Physics.

PO 2: Demonstrate the ability to use skills in Physics and its related areas of technology for formulating and tackling Physics-related problems, and identifying and applying appropriate physical principles and methodologies to solve a wide range of problems associated with Physics.

PO 3: Recognize the importance of mathematical modelling, simulation and computing, and the role of approximation and mathematical approaches to describe the physical world.

PO 4 : Plan and execute Physics-related experiments or investigations, analyze and interpret data/information collected using appropriate methods, including the use of appropriate software such as programming languages and purpose-written packages, and report accurately the findings of the experiment/investigations while relating the conclusions/findings to relevant theories of Physics

PO 5 : Demonstrate relevant generic skills and global competencies such as

PROGRAMME SPECIFIC OUTCOMES

- PSO 1 Fundamental understanding of the field
- PSO 2 Application of basic Physics concepts
- PSO 3 Linkages with related disciplines
- PSO 4 Procedural knowledge for professional subjects
- PSO 5 Skills in related field of specialization
- PSO 6 Ability to use in Physics problem
- PSO 7 Skills in Mathematical modelling
- PSO 8 Skills in performing analysis and interpretation of data
- PSO 9 Develop investigative Skills
- PSO 10 Skills in problem solving in Physics and related discipline
- PSO 11 Develop technical communication skills
- PSO 12 Developing analytical skills and popular communication
- PSO 13 Developing ICT skills
- PSO 14 Demonstrate professional behaviour with respect to attributes like objectivity, ethical values, self reading, etc

Subject and code: PH 571.1 Mathematical Physics I

Course Outcomes:

- C O 1 To review the knowledge of vectors and scalar quantities.
- C O 2 To learn the concepts of vector calculus such as divergence, curl, line integrals, surface integrals, volume integrals.

C O 3 To study fundamental theorems like The Green's theorem, Stokes' theorem and their applications in Physics.

C O 4 To learn the concepts of curvilinear coordinates and to learn the concepts of vector calculus in curvilinear coordinates.

C O 5 To learn the basic properties of matrices and to study the properties of special types of matrices like Hermitian, Unitary and Orthogonal matrices.

C O 6 To study similarity and unitary transformations, concept of eigenvalues and eigenfunctions, Cayley-Hamilton's Theorem and Diagonalization of matrices.

C O 7 To learn basic definitions of tensors and transformation laws of coordinates. Different types of tensors and algebra of tensors including quotient law.

C O 8 To learn about first and second order partial differential equations, their classification.

C O 9 To solve special equations like Heat equation, Laplace's equation, Poisson's equation.

C O 10 To learn to solve a differential equation using the method of power series.

C O 11 To learn different special functions like Legendre polynomials, Bessel's function, Laguerre polynomials and Hermite's polynomials and to study orthogonality conditions and different recurrence relations of these functions.

Subject and code: PH 572.1 Classical Mechanics

Course Outcomes:

C O 1 Define and understand the basic concepts related to single particle and a system of particles

C O 2 Describe the motion of a mechanical system using Lagrange and Hamilton formalism. C O 3 Understand the principles of collisions and learn about the concept of centre of mass and laboratory coordinate system

C O 4 Acquire the basic knowledge of the Phase space and Phase trajectory

C O 5 Learn about the canonical transformation

C O 6 Learn about the concept of two body problem

C O 7 Learn the conservation theorems

C O 8 Acquire the knowledge about equation of the orbit and orbit's classification

C O 9 Learn the Kepler's laws of planetary motion

C O 10 Learn the general description and the concept of Scattering

C O 11 Learn the dynamics of the rigid body

C O 12 Understand the rigid body dynamics

C O 13 Learn the theory of small oscillation

Subject and code: PH 573.1 Classical Electrodynamics

Course Outcomes:

C O 1 To learn to apply the fundamentals of electrostatics and boundary conditions to solve various problems

C O 2 To learn the fundamentals of magnetostatics and magnetism

C O 3 To learn the electromagnetic theory through Maxwell equations and underlying theories

C O 4 To get a grip on gauge symmetries and transformations and also on radiation emission of a moving or oscillating charge

C O 5 To arrive at the plane wave equation of the electromagnetic fields and studying the plane wave solutions

C O 6 Analysis of reflection and transmission of waves: using electromagnetic boundary

conditions.

C O 7 To learn the theory of waveguides and solve the problem of rectangular waveguide.

C O 8 To derive the Lorentz transformation equations and understanding basic relativistic dynamics. C O 9 Lorentz transformation and relativistic dynamics is learnt to be written in four vector (tensor) notation.

C O 10 Basic laws of electrodynamics, continuity equation, Maxwell's equations, Gauge transformations and potential theory in tensor notation.

Subject and code: PH 574.1 Electronics

Course Outcomes:

C O 1 Understand characteristics of an ideal operational amplifier (Op-amp) and a practical operational amplifier, open loop and closed loop applications of op-amp; use Op-amp for basic mathematical

operations like addition, subtraction, multiplication, integration and differentiation applications and a few special applications such as filtering and comparators.

C O 2 Learn the use of op-amp for wave form generation applications and the applications of timer IC 555.

C O 3 Understand the meaning and types of power amplifiers and their applications. The student will be able to learn specialized applications of SCR, signal conditioning and other varieties of transducer circuits.

C O 4 Will be able to review basics of digital circuits, few aspects of registers and digital data storage, synchronous and asynchronous counter applications, memory devices and basics of a microprocessor.

Semester-II

Subject and code: PH 571.2 Mathematical Physics II

Course Outcomes:

C O 1 To review the concepts of complex numbers and functions of complex variables.

C O 2 To study calculus of complex functions, Cauchy Riemann conditions and differentiability

C O 3 To learn integration of complex functions, Cauchy integral theorem, concepts of poles, singularities, residues.

C O 4 To study integration of complex functions using residue theorem also to get a good hold in the concept of mapping and conformal mapping.

C O 5 To review the understanding in Group theory and study the concept of transformation group and symmetry groups.

C O 6 To study representation of groups and understand the concepts of irreducible representations. C O 7 To learn Lie groups and their application in Physics.

C O 8 To apply the Green's functions to solve various differential equations.

C O 9 Reviewing and understanding the concepts of Fourier series and studying the concepts of Fourier transform and their applications in Physics and Electronics.

C O 10 To study Laplace's transforms and their applications in Physics.

C O 11 To learn to interpolate a function using various numerical methods.

C O 12 To study the method of solving non linear equations and also differential equations using numerical methods.

C O 13 To learn integration of various functions by numerical methods.

Subject and code: PH 572.2 Quantum Mechanics I

Course Outcomes:

C O 1 To setup the Schrödinger equation and to understand the physical interpretation of

a quantum mechanical wave function.

C O 2 To study in detail the fundamental postulates of quantum mechanics.

C O 3 To understand the concepts of eigenvalues, eigenfunctions and degeneracy being applied to quantum mechanics.

C O 4 To study various commutation relations and to understand its meaning

CO5 To setup the Time Independent Schrödinger equation and to learn the concept of stationary states.

C O 6 To solve various problems like potential well, potential barrier and harmonic oscillator and to study the properties of stationary states of these problems.

C O 7 To study the concept of angular momentum in quantum mechanics and to arrive at the eigenvalues and eigenfunctions of angular momentum and hence to understand the concept of space quantization.

C O 8 To study the applications of angular momentum to spherically symmetric systems and to study parity.

C O 9 To solve the problem of Hydrogen like atoms in atomic physics.

C O 10 To review the concept of scattering and to study quantum mechanical scattering.

C O 11 To understand Partial wave analysis in quantum mechanical scattering and also to apply Born approximation

Subject and code: PH 573.2 Condensed Matter Physics- I

Course Outcomes:

C O 1 A brief idea about crystalline materials-lattice- unit cell-miller indices-reciprocal lattice etc.

C O 2 Production and applications of X-ray. X-ray diffraction. Point groups and space groups and quasi crystals

C O 3 Crystal binding- types of bonds, concept of phonon vibration, phonon scattering, thermal expansion of solids and lattice thermal conductivity

C O 4 Free electron models of metals, quantum free electron theory, F.D Statistics, Electron in aperiodic potential, Bloch theorem, metals, semimetals and semiconductors.

C O 5 Semiconductors-types, Impurity atoms, electrical conductivity, quantized Hall Effect, amorphous semiconductors, organic semiconductors.

Subject and code: PS 574.2 Research Methodology and Ethics

Course Outcomes:

C O 1 To have clear understanding of the meaning and purpose of Research in academics, research philosophy and strategies of Research.

C O 2 To acquaint with the knowledge of methodology involved in a scientific Research

C O 3 To know writing of a good Research Report.

C O 4 To understand the ethical issues and practices in research with an awareness of rights and obligations of research participants.

C O 5 Understand the process of Intellectual property Rights and its different forms and implications

C O 6 To know how to write research papers and publish research papers.

Subject and code: PO 577.2 Biophysics

Course Outcomes:

C O 1 To study the basic concepts of radioactivity and the dose measurements using dosimetry

C O 2 To study the interaction of radiations like charged particles, electrons, electromagnetic radiation and the neutrons with matter and their energy loss.

- C O 3 The detection of nuclear radiation using gas filled detector, semiconductor detectors and neutron detectors
- C O 4 To explain the effect of radiation on DNA and DNA repair mechanisms.
- C O 5 To explain the effect of radiation on chromosome and to study the radiation dose response of chromosomal aberrations.
- C O 6 Biological applications of delocalization of molecules
- C O 7 DNA and RNA structure and the effect of radiation on them
- C O 8 Study of proteins, enzyme and carcinogenic activities

Semester III

Subject and code: PH 571.3 Quantum Mechanics II

Course Outcomes:

- I (PH 571.1) so that it can be applied to quantum mechanical calculations.
- C O 2 To learn the method of Dirac's ket and bra notations and to learn about general uncertainty relation and theorems like Schwartz inequality.
 - C O 3 To learn the Schrödinger, Heisenberg and interaction picture and to derive equations of motion and hence to get a broad idea of the process of quantization of a system.
 - C O 4 To solve the harmonic oscillator and angular momentum problem by matrix method.
 - C O 5 To study the concept of spin and addition of angular momenta.
 - C O 6 To study various approximation techniques in quantum mechanics like Perturbation theory, WKB approximation and variational technique.
 - C O 7 To study the above techniques with real quantum mechanical examples.
 - C O 8 To setup a relativistic wave equation (Klein-Gordon equation) and to understand the existence of negative probability density.
 - C O 9 To setup the Dirac's equation, to study the properties of the Dirac's matrices and to arrive at the solutions of Dirac's equation and hence to give the concept of anti particles through the negative energy solutions of the Dirac's equations.
 - C O 10 To introduce the concept of quantization of fields by first quantizing a classical field and then for a Schrödinger's field and relativistic fields.

Subject and code: PO 577.2 Biophysics

Course Outcomes:

- C O 1 To review the concepts of linear algebra studied in Mathematical Physics
PH 572.3 Condensed Matter Physics- II
- C O 1 To understand various types of crystal defects and imperfections in crystal growth process.
 - C O 2 To familiarise luminescence and related phenomenon.
 - C O 3 To understand thermodynamics phase transitions, order-disorderness and theories of phase transitions.
 - C O 4 To review magnetic properties of materials and theories of magnetism.
Applications of magnetic properties- Magnetometer, NMR, Resonance.
 - C O 5 Domain theory of magnetic materials.
 - C O 6 To understand dielectric materials and their applications.

Subject and code: PH 573.3 Thermodynamic and Statistical Physics

Course Outcomes:

- C O 1 To understand the relevant quantities used to describe macroscopic systems and thermodynamic potential

- C O 2 Understand the macroscopic and microscopic description of temperature, entropy and free energy
- C O 3 Learn the theory of probability
- C O 4 Understand the concept ensembles and theory of ensembles
- C O 5 Understand macrostates and microstates
- C O 6 Learn partition functions and their importance
- C O 7 Learn the various distribution functions and their uses in classical and quantum mechanical non-interacting assemblies of systems
- C O 8 Describe the transport phenomena and understand the diffusion coefficients
- C O 9 Learn the concept of fluctuation
- C O 10 Understand the random walk problem

Subject and code: PH 573.3 Thermodynamic and Statistical Physics

Course Outcomes:

- C O 1 To understand the relevant quantities used to describe macroscopic systems and thermodynamic potential
- C O 2 Understand the macroscopic and microscopic description of temperature, entropy and free energy
- C O 3 Learn the theory of probability
- C O 4 Understand the concept ensembles and theory of ensembles
- C O 5 Understand macrostates and microstates
- C O 6 Learn partition functions and their importance
- C O 7 Learn the various distribution functions and their uses in classical and quantum mechanical non-interacting assemblies of systems
- C O 8 Describe the transport phenomena and understand the diffusion coefficients
- C O 9 Learn the concept of fluctuation
- C O 10 Understand the random walk problem

Subject and code: PS 573.3 Relativity and Cosmology

Course Outcomes:

- C O 1 To learn the concepts of Special Theory of Relativity in Tensor notations and also to understand the concepts like Momentum transformations.
- C O 2 To study tensor analysis as a prerequisite for the General Theory of relativity and understand the meaning of a metric, geodesic and covariant differentiation.
- C O 3 To learn the theory of General Relativity starting from the Principle of Equivalence and General Covariance by deriving the Einstein's field equations.
- C O 4 To solve the Einstein's field equation for a weak metric case and arrive at Schwarzschild solutions and also to learn about the Schwarzschild radius and Black holes.
- C O 5 To study the various experimental predictions of General Relativity in detail.
- C O 6 To understand various principles underlying the study of Cosmology.
- C O 7 To study various cosmological models that explain the birth and evolution of universe.

Subject and code: PS 574.3 Optics

Course Outcomes:

- C O 1 To study the various natures of progressive plane waves with relevant solutions to the plane wave equations.
- C O 2 To learn the Fermat's principle and Helmholtz and Lagrangian equations in magnification.
- C O 3 To study the wave theory by Huygen in detail and to deduce the laws of reflection

and refraction using the same.

C O 4 To study the phenomena of Interference, Diffraction and Polarization with rigorous mathematics and physical examples.

C O 5 To study Electro-optic effect and to learn to draw the index ellipsoid for crystals.

C O 6 To study the phenomenon of Acousto-optic effect and to understand Raman-Nath and Bragg diffraction in crystals.

Subject and code: PO 577.3 Experimental Techniques

Course Outcomes:

C O 1 Understand the properties of laser

C O 2 Learn about the specific laser and their applications in day to day life

C O 3 Learn about the theory of nonlinear optics

C O 4 Learn about the second and third harmonic generation

C O 5 Learn the concept of nonlinear absorption coefficients, nonlinear refractive index and nonlinear susceptibility

C O 6 Learn the method of Z-scan technique

C O 7 Learn the concept of vacuum and its units

C O 8 Learn about the techniques to measure vacuum

C O 9 Learn about the working principle of different vacuum pumps

C O 10 Understand the working principles of TEM, SEM, XPS etc.

Semester IV

Subject and code:PH 571.4 Atomic and Molecular Physics

Course Outcomes:

C O 1 To review the Bohr model and Vector model of the atom based on the experiments determining space quantization.

C O 2 To understand the structure of the simplest atomic system, the hydrogen atom by studying its various spectra.

C O 3 The interactions within the atomic system is studied using the perturbation theory for a detailed understanding of the fine and hyperfine atomic structure.

C O 4 Zeeman effect, Stark effect elucidate the influence of an external magnetic and electric field on the atomic system.

C O 5 X-ray spectra of the atoms are studied.

C O 6 The transition processes by absorption, stimulated and spontaneous emission, when an atom interacts with an electromagnetic field are studied in detail.

C O 7 The probability of transitions, rates, selection rules, lifetime of atomic states, spectral line widths, line shapes and broadening are understood.

C O 8 Molecular structure is understood for a simple diatomic molecule by studying the spectra.

C O 9 Microwave spectroscopy, infrared spectroscopy, ultraviolet-visible spectroscopy techniques of the molecular systems are studied with detailed theory, instrumentation and application.

C O 10 Raman spectroscopy, nuclear magnetic resonance (NMR) spectroscopy, electronic spin resonance (ESR) spectroscopy, Mossbauer spectroscopy are studied with the fundamental theoretical background, instrumentation and applications to specific systems.

Subject and code: PH 572.4 Nuclear and particle Physics

Course Outcomes:

C O 1 The internal properties like mass, charge and size of atomic nuclei

- C O 2 The external properties like binding energy, spin, electronic and magnetic moment.
- C O 3 To study in detail the concept of Radioactivity.
- C O 4 Detailed study on nuclear decays and their selection rules
- C O 5 To study the radiation energy loss by charged particles, electrons, electromagnetic radiation and the neutrons with matter and their energy loss.
- C O 6 The radiation detection through gas filled detector, semiconductor detectors and neutron detectors
- C O 7 Two review the different properties of Nuclear forces like short range, saturation, charge independence, spin dependence.
- C O 8 To study the ground state of the deuteron problem using square well potential and as a mixture of S and D states and to learn the electric and magnetic quadrupole moments of the Deuteron bound state.
- C O 9 Yukawa's theory of nuclear forces and to explain the anomalous magnetic moment of nucleus.
- C O 10 To describe basic models like liquid drop model and shell model of the atomic nucleus.
- C O 11 Explain processes of nuclear collisions, nuclear reactions and cross section
- C O 12 To study the classification of fundamental forces and conservation laws
- C O 13 Classification of elementary particles and the properties of the particles
- C O 14 Gell-Mann-Nishijima formula and CPT theorem
- C O 15 Application of symmetry arguments to particle reactions

Subject and code: PS 574.4 Communication Theory

Course Outcomes:

- C O 1 Transmission Lines, types and line parameters such as impedance, reflection coefficient, propagation constant. Line distortion and attenuation. Quarter and half wavelength lines. Impedance matching, quarter wave transformer, stub matching. Smith chart and its applications.
- C O 2 Wave guides and antenna: Basic concepts, TE and TM waves, types. Cavity resonators. Directional couplers. Electromagnetic radiation, elementary doublet, current and voltage distribution, resonant and non resonant antennas and their characteristics, grounded and ungrounded antennas. Effect of antenna height. Microwave antennas.
- C O 3 Microwave devices -Multicavity klystron, reflex klystron, parametric amplifiers, Gunn diode, Microwave transistors, FETs. Communication subsystems, description of the communication system transponders, spacecraft antennas, frequency reuse antennas, multiple access schemes, FDMA, TDMA, CDMA. Satellite communication

Subject and code: PS 575.4 Laser, Vacuum Techniques and Nonlinear Optics

Course Outcomes:

- C O 1 Understand the properties of laser
- C O 2 Learn about the specific laser and their applications in day to day life
- C O 3 Learn about the theory of nonlinear optics
- C O 4 Learn about the second and third harmonic generation
- C O 5 Learn the concept of nonlinear absorption coefficients, nonlinear refractive index and nonlinear susceptibility
- C O 6 Learn the method of Z-scan technique
- C O 7 Learn the concept of vacuum and its units

C O 8	Learn about the techniques to measure vacuum
C O 9	Learn about the working principle of different vacuum pumps
C O 10	Understand the working principles of TEM, SEM, XPS etc techniques
Subject and code: PS 576.4 Condensed Matter Physics- III	
Course Outcomes:	
C O 1	Different techniques of thin film preparation, thickness measurement techniques and theory of nucleation, properties and applications.
C O 2	Superconductivity Principle, Types, Thermodynamics of superconductivity, BCS theory. Josephson effect and applications.
C O 3	Smart materials of types, preparation and properties.
C O 4	Nanostructural materials - synthesis, characterization, organization and application.
Subject and code: PS 577.4 Nuclear Structure	
Course Outcomes:	
C O 1	To study Deuteron problem as a mixture of S and D states and to learn the electric and magnetic quadrupole moments of the Deuteron bound state.
C O 2	Two review different properties of Nuclear forces like charge independence, spin dependence, tensor character and exchange character.
C O 3	To study Meson exchange theory and many body potential that describes the nuclear forces.
C O 4	To analyse the n-p and p-p scattering at low energies using partial wave analysis and to understand the spin dependence of nuclear forces.
C O 5	To learn the effective range theory, coherent scattering and examples for hydrogen in scattering studies.
C O 6	To compare the theoretical understandings and predictions with the experimental results of n-p and p-p scattering.
C O 7	To study quantitatively the Fermi gas model, Independent particle model, the collective model and the Nilsson model.

Department Name:	P 580 M.Sc. (Chemistry)
PROGRAMME OUTCOMES	
PO 1: Inculcate critical thinking to carry out scientific investigation objectively in industry and academia by following scientific approach to knowledge development.	
PO 2: Equip the student with necessary skills to analyse scientific problems, formulate hypothesis, evaluate and validate results, and draw conclusions from the data obtained	
PO 3: Equip the student with the knowledge for clear understanding of the subject related concepts to lead them for interdisciplinary and trans disciplinary research	
PO 4: Induce the sense of professional and ethical responsibility and enhance the cross cultural competency	
PO 5: Demonstrate an understanding of major concepts in all disciplines of chemistry	
PO 6: Get an awareness of the impact of chemistry on the environment, society, and other cultures outside the scientific community	
PROGRAMME SPECIFIC OUTCOMES	
PSO 1: To acquire basic knowledge of the analytical chemistry of important techniques that will provide the basis for their industrial production methods.	

PSO 2: To provide an adequate mastery of analytical methods used for the determination of commercial/domestic raw materials and finished product quality.

PSO 3: To Able to carry out independent research through application of spectroscopic knowledge which in turn facilitates the submission of project/research article.

PSO 4: Able to successfully prepare for the competitive examinations like CSIR-NET, GATE and State Level eligibility test for Lectureship

PSO 5: Develop strong analytical skills and strong background in the Chemical sciences to join Chemical and Pharmaceutical industry

PSO 4: Able to successfully prepare for the competitive examinations like CSIR-NET, GATE and State Level eligibility test for Lectureship

Subject and code: PH 581.1: INORGANIC CHEMISTRY

Course Outcomes:

. Student will be able to:

- Explain the chemistry of acids, bases, non-aqueous solvents and the concepts of hard and soft acids and bases
- Describe the types of bonds and molecular shape of compounds with emphasis on VSEPR, VB and MO theory of complexes.
- Discuss the properties of the non-transition elements like C, B and Si and their frameworks
- Illustrate the properties and justify the anomalies of Nitrogen, Phosphorus, Sulphur and noble gas compounds.

Subject and code: PH 582.1 : ORGANIC CHEMISTRY

Course Outcomes:

Student will be able to:

- Explain the basic concepts of organic chemistry and the forces of attraction between different molecules.
- Explain the reaction intermediates and mechanisms.
- Demonstrate the importance of conformation and stereochemistry in understanding the reactivity and stability of organic molecules
- Detail the synthesis and stereochemistry of carbohydrates

Subject and code: PH 583.1: PHYSICAL CHEMISTRY

Course Outcomes:

Student will be able to:

- Understand the basic concepts of thermodynamics and its applications.
- Recollect the basics and understand fundamental ideas of chemical kinetics and its applications
- Familiarize with the various concepts in heterogeneous catalysis.
- Study and apply the principle and applications of electrochemistry

Subject and code: PS 584.1 : PRINCIPLES OF ANALYTICAL CHEMISTRY & SEPARATION TECHNIQUES

Course Outcomes:

Student will be able to:

- Imbibe knowledge about various sampling techniques and errors.
- Evoke the fundamental concepts of different titration techniques
- Understand the principle of different chromatography techniques and apply that knowledge for the separation and purification of various samples

Subject and code: PS 585.1 BIO-ORGANIC CHEMISTRY

Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Understand the chemical principles of living cells, the biomolecules and biocatalytic reactions. Study the basic principles underlying the chemistry of nucleic acids. Explain the structure determination, synthesis and classification of biomolecules like vitamins and lipids
Subject and code: PS 586.1 RESEARCH METHODOLOGY
Course Outcomes:
<p>Student will be able to:</p> <p>Evaluate Research output with philosophical base and greater relevance to the society</p> <p>Identify the parameters of Quality research with scientific methodology</p> <p>Understand the concepts involved in Original Research, ethical guidelines and practices in conducting the research and publication of papers.</p> <p>Create awareness on Intellectual property Rights and Patents.</p>
Subject and code: PS 587.1P: INORGANIC CHEMISTRY PRACTICALS – I
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Estimate the quantity and quality of different compounds and metal ions using gravimetry, volumetry and complexometric techniques.
Subject and code: PS 588.1P : ORGANIC CHEMISTRY PRACTICALS - I
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Carry out multi-step organic synthesis Purify the synthesized organic compounds
Subject and code: PS 589.1P : PHYSICAL CHEMISTRY PRACTICALS – I
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Carry out experiments related to chemical kinetics, viscometry, Polarimetry, Refractometry, Conductometry and Potentiometry
Semester-2
Subject and code: PH 581.2: ADVANCED INORGANIC CHEMISTRY
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Understand the Chemistry of d block elements, Lanthanides and Actinides and explain their magnetic and electronic properties Describe the VB and MO theory of complexes and electronic and bonding reactivities of transition metals Explain the spectral and magnetic properties of metal complexes Describe the basic concepts of organometallic chemistry and their bonding patterns especially with unsaturated ligands
Subject and code: PH 582.2: ADVANCED ORGANIC CHEMISTR
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Describe the mechanisms of different types organic reactions. Understand the chemistry of radical reactions and its applications.

<ul style="list-style-type: none"> Understand the mechanism of additions to various Carbon-based multiple bonds Achieve skills in constructing homo/heterocyclic rings of significant molecules
Subject and code:PH 583.2: ADVANCED PHYSICAL CHEMISTRY
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Gather knowledge of Quantum Chemistry and its application Explain the approximation methods in quantum mechanics Explain the relationship between microscopic properties of molecules with macroscopic thermodynamic observables Describe the quantum mechanical explanation of chemical bonding
Subject and code:PS 584.2: MOLECULAR SYMMETRY AND MOLECULAR SPECTROSCOPY
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Apply the principles of group theory in chemical bonding. Define aspects of specific spectroscopic techniques, applications of molecular symmetry in Microwave and Vibrational spectroscopy Define aspects of specific spectroscopic techniques, applications of molecular symmetry in Rotational and Raman spectroscopy
Subject and code:PS 585.2 : CHEMISTRY OF BIOMOLECULES
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Explain the structure and role of biomolecules like peptide, proteins and lipids Understand the chemical principles of living cells, their biomolecules and biocatalytic reactions. Detail the synthesis and stereochemistry of carbohydrates
Subject and code:PS 586.2P : INORGANIC CHEMISTRY PRACTICALS – II
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Estimate binary mixtures of metallic ions in solution Analyse the presence of inorganic salts qualitatively
Subject and code:PS 587.2P : ORGANIC CHEMISTRY PRACTICALS – II
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Separate and analyse the binary mixture of Organic Compounds <p>Separation and Systematic Qualitative Analysis of Binary Mixtures of Organic Compounds</p>
Subject and code:PS 588.2P : PHYSICAL CHEMISTRY PRACTICALS – II
Course Outcomes:
<p>Course Outcome:</p> <p>Student will be able to:</p> <ul style="list-style-type: none"> Determine cryoscopic constants, dissociation constants and various other physical properties of compounds
Subject and code:PO 589.2- SPECTRAL METHODS OF ANALYSIS
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> Understand theory and application to mass spectrometry, ultraviolet and visible spectroscopy

<ul style="list-style-type: none"> • Understand infrared spectroscopy, X Ray and • Gain a basic understanding of nuclear magnetic resonance spectroscopy
Semester-III
Subject and code:PH 581.3: ORGANOMETALLIC, BIOINORGANIC AND COORDINATION CHEMISTRY
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Describe the basic concepts, synthesis, reaction chemistry of organometallic compounds and the structure and bonding patterns. • Detail the mechanism of different organometallic reactions and catalysis and their application as industrial catalysts. • Understand the nomenclature, metal-ligand reactions and their mechanism and identify the bonding, structure, and reactivity of selected coordination complexes. • Understand the role and interaction of Metal ions in biological systems.
Subject and code:PH 582.3: ELECTROCHEMISTRY AND THERMOANALYTICAL METHODS
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Detail the structure of electrode-electrolyte interface with various models such as Helmholtz - Perrin, Gouy - Chapman and Stern model of electrical double layers. • Describe the physical principles of Photo electrochemistry and its classification. • Understand the basic principles of corrosion science. • Describe the methods of corrosion protection and explain the principles of corrosion protection.
Subject and code: PS 583.3: MOLECULAR SPECTROSCOPY
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Gather knowledge about various spectroscopic techniques such as IR, NMR UV and Mass spectroscopy analysis. • Understand theory and application to mass spectrometry, ultraviolet and visible spectroscopy, infrared spectroscopy, nuclear magnetic resonance spectroscopy. • Apply NMR, IR, MS, UV-Vis spectroscopic techniques in solving structure of organic molecules.
Subject and code: PS 584.3 :MEDICINAL CHEMISTRY
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Explain the mechanism of drug action and drug designing. • Understand the classification, structure and mechanism of drugs action. • Develop an understanding on various CNS depressants
Subject and code:PS 585.3P: COMPUTERS FOR CHEMISTS - PRACTICALS
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Understand about the different operating systems and software's • Get a training on using subject specific software's. • Get hands-on experience to use the relevant software's

Subject and code: PS 586.3P: INORGANIC CHEMISTRY PRACTICALS – III
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Estimate binary mixtures of metallic ions in solution • Detect presence of certain type of ions in water.
Subject and code:PS 587.3P ORGANIC CHEMISTRY PRACTICALS – III
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Separate and perform systematic qualitative analysis of binary mixtures of organic compounds containing both mono and bifunctional groups and preparation of suitable derivatives.
Subject and code: PS 588.3P : PHYSICAL CHEMISTRY PRACTICALS – III
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Carry out experiments related to chemical kinetics, Polarimetry, Conductometry and Potentiometry
Subject and code: PO589.3 - BIO-INORGANIC CHEMISTRY, GREEN CHEMISTRY AND ENVIRONMENTAL CHEMISTRY
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Understand the role and interaction of Metal ions in biological systems. • Understand the principle and importance of green chemistry. • Identify environmental problems related to pollution, identify and utilize eco-friendly methods to protect it, understand and apply green chemical methods solve the problems related to environmental pollution.
Semester-IV
Subject and code: PH 581.4: ORGANIC SYNTHETIC METHODS
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Understand and apply the various reagents in organic synthesis and design organic synthetic reactions. • Describe the applications of oxidation and reduction techniques in organic synthesis. • Prefer suitable reagent for important reactions/building appropriate bonds. • Understand the principles and applications of protecting groups in chemistry.
Subject and code: PH 582.4 : RADIATION AND PHOTOCHEMISTRY
Course Outcomes:
Student will be able to: <ul style="list-style-type: none"> • Demonstrate a systematic understanding of the key aspects of nuclear chemistry and their analytical applications • Acquire knowledge of nucleus, nuclear reaction, radioactive techniques and application of radioisotopes. • Describe the methods of measurements and kinetics of photochemical reactions • Discuss the principle of absorption and emission of radiation and explain the mechanism of Jablonski diagram

Subject and code: PH 583.4: CHEMISTRY OF POLYMERS AND NATURAL PRODUCTS
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> • Understand preparation methods, property uses of some industrially important polymers. • Describe the morphology, structure thermal, physical, and mechanical properties of polymers. • Gather knowledge about the classification, isolation techniques, understand the various synthetic approaches in Natural Products synthesis structural elucidation of natural products. • Explain the basics and applications of concerted reactions and pericyclic reactions. <p>Develop an in-depth knowledge of the basics and applications with mechanistic understanding in concerted reactions apply those in the synthesis of organic compounds.</p>
Subject and code: PS 584.4P ORGANIC CHEMISTRY PRACTICALS – IV
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> • Detail the various organic reactions and their synthetic procedures. • Analyze the separation processes of various organic compound mixtures and their quality checking processes
Subject and code:PS 585.4P : INORGANIC CHEMISTRY PRACTICALS – IV
Course Outcomes:
<p>Student will be able to:</p> <ul style="list-style-type: none"> • Estimate binary mixtures of metallic ions in solution. • Study structure of the prepared complexes using conductance and magnetic susceptibility measurements, recording the electronic and infrared spectra:
Subject and codePS 587.4 : SOLID STATE AND NANO CHEMISTRY
Course Outcomes:
<p>Course Outcome:</p> <p>Student Will be able to:</p> <ul style="list-style-type: none"> • Understand the theory of diffraction techniques • Gain a domain knowledge about crystal systems and defects • Understand the importance and basic concepts of Nano Chemistry
Subject and code:PS 588.4 :OPTICAL METHODS OF ANALYSIS
Course Outcomes:
<p>Course Outcome:</p> <p>Student Will be able to:</p> <ul style="list-style-type: none"> • Understand the theory of diffraction techniques • Gain a domain knowledge about crystal systems and defects • Understand the importance and basic concepts of Nano Chemistry
Subject and code:
Course Outcomes:
Subject and code:
Course Outcomes:
Subject and code:

Course Outcomes:

Department Name:	P 590 M.Sc. (Food Science and Technology)
-------------------------	--

PROGRAMME OUTCOMES

PO 1 Scientific Knowledge: Knowledge on the fundamentals of food science and nutrition, food chemistry and biochemical changes during processing and preservation, nutraceuticals, also students will be able to understand and apply sensory evaluation of food.

PO 2 Design/development of solutions: Design solutions for complex food engineering problems or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. Students will also develop an ability to work in modern tools and equipment's to analyze food composition, identify microorganism responsible for food spoilage.

PO 3 Problem analysis: Understand the principles behind analytical techniques used in evaluating the biochemical properties of food; they will be able to identify the microorganism responsible for food spoilage and the methods to control the food spoilage.

PO 4 Modern tool usage: Demonstrate knowledge in various engineering properties of food and its application in food industry, concept of mass balance and energy balance, unit operations in food processing, conventional and advanced methods of food preservation, methods of packing, post-harvest practices so as to develop food products and develop device for food industry.

PO 5 Skill development and application: Develop specific skill based on their interest in bakery and confectionery, meat, poultry and fish processing, food fermentation, dairy processing. Students will also be able to apply the principles of Hazard Analysis and Critical Control Points (HACCP) to ensure safe food processing, Students will also have knowledge in regulations governing the manufacture and sales of the food products.

PO 6 Research capabilities and Project management: Demonstrate the ability to apply knowledge through critical thinking, inquiry, analysis, and communication to produce scholarly and creative works in the form of an original oral scientific presentation, master's thesis/report, scientific manuscript for wide publication; participate as a member and leader in a team in order to manage multidisciplinary projects.

PO 7 Ethics: Demonstrate awareness of their responsibilities (professional integrity, ethical behavior, etc.) and commit to the highest standards of academic and professional integrity and ethical values.

PO 8 Environment and sustainability: Comprehend the impact food technologies and food waste processing solutions in societal and environmental contexts and promulgate the knowledge to strategize various approaches for sustainable development.

PO 9 Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings which are basic qualities for a Food technologist.

PO 10 Interpersonal Skills: Listening and effective speaking on food science problem with the small, medium and large-scale food business operators and with the society at large. For instance, ability to comprehend and published effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11 Life-long learning: Identify the need for and be prepared to engage in independent and life long learning in the most extensive context of methods and technological advancement in the field of food science and technology.

PROGRAMME SPECIFIC OUTCOMES

PSO 1 To inculcate technical writing and communicating ability for effective documentation and presentations and develop strong research aptitude through research work to enable the

students to opt for higher levels of learning in the field of Food Science and Technology.

PSO 2 To acquaint and equip students with professional and intellectual integrity, ethics of research and scholarship, impact of research outcomes on professional practices and responsibilities to contribute positively in the sustainable development of society.

PSO 3 To enable the students to get engaged in lifelong learning independently with the vigor and zeal and becomes capable to start-up their own businesses.

Subject and code:PH 591.1: Food Chemistry**Course Outcomes:**

CO 1

Know the chemistry underlying the properties and reactions of various food components

CO 2 Have sufficient knowledge of food chemistry to control reactions in foods.

CO 3 Know the major chemical reactions that limit shelf life of foods.

CO 4 Use the laboratory techniques common to basic and applied food chemistry.

CO 5 Know the principles behind analytical techniques associated with food.

Subject and code: PH 592.1 Principles of Food Processing and Preservation**Course Outcomes:**

CO 1 Describe the source and variability of raw food material and their impact on food processing operations.

CO 2 Explain the spoilage and deterioration mechanisms in foods and methods to control deterioration and spoilage.

CO 3 Describe the unit operations required to produce a given food product.

CO 4 Explain the principles and current practices of processing techniques and the effects of processing parameters on product quality.

Subject and code:PH 593.1 Fruits and Vegetables Processing Technology**Course Outcomes:**

CO 1 Better understanding of the concepts of physiological characteristics of fruits and vegetables.

CO 2 Better insight about fruit losses during storage and ways to prevent it.

CO 3 Thorough Knowledge and understandings of the specific processing technologies used for different foods and the various products derived from these materials.

CO 4 The students acquire insight into specific product and process related factors in the processing of fruits and vegetables.

Subject and code:PS 596.1 Processing of Milk and Dairy Products**Course Outcomes:**

CO 1 Understand the processes related to storage, processing and distribution of milk and milk products.

CO 2 Perceive the different properties of milk and milk products and apprehend the thermal processing of milk.

CO 3 Grasp the technology of fat rich dairy products and Comprehend the technology of condensed milk, dried milk, cheese, yoghurt and indigenous products will be understood.

CO 4 Have knowledge regarding hygiene and sanitation practices in the milk and milk products industry.

Subject and code:PS 597.1 Waste Management and Environmental Sustainability

Course Outcomes:

- CO 1 Learn physical/ chemical/biological characteristics of and the evaluation technique form various industrial waste water.
- CO 2 Understand the theory, engineering application, and design technique for the industrial wastewater treatment unit processes.
- CO 3 Design various environmental structures like water treatment plants, waste water treatment systems and air pollution control equipment's.
- CO 4 Know solid waste remedial measures and their importance and Undertake projects related to solid waste management.
- CO 5 Make decision based on the environmental consequences of proposed actions and promote environmentally sound and sustainable development by identifying appropriate measures.
- CO 6 A sound understanding of the principal environmental policy issues confronting managers in diverse geographical and culture situations.
- CO 7 A range of relevant practical skills, particularly in the fields of impact assessment, audit and law.

Semester-II**Subject and code:PH 591.2 Food Process Engineering and Instrumentation****Course Outcomes:**

- CO 1 Comprehend the recent advancement in the major cereal grains' quality and processing aspects.
- CO 2 Understand the mechanism underlying the interaction of various flour components and their role in end use quality.
- CO 3 Grasp the basic and advanced milling methods for wheat, rice, maize.
- CO 4 Know about by-product utilization of various grains.
- CO 5 Comprehend the recent advancement in the major cereal grain's quality and processing aspects.

Subject and code:PH 592.2 Processing Technology of Cereals, Pulses and Oil Seeds**Course Outcomes:**

- CO 1 Students will be able to identify and describe various processing techniques for cereals, pulses, and oil seeds, including cleaning, sorting, grading, milling, and extrusion.
- CO 2 Students will be able to evaluate the quality of processed cereal, pulse, and oil seed products, including factors such as nutritional value, sensory attributes, and shelf life.
- CO 3 Students will be able to identify and describe the equipment and machinery used in cereal, pulse, and oil seed processing, and understand their functions and operating principles.
- CO 4 Students will have a good understanding of the safety and hygiene considerations involved in cereal, pulse, and oil seed processing, including food safety regulations, hazard analysis, and critical control point (HACCP) procedures.
- CO 5 Students shall be able to develop processing strategies for specific cereal, pulse, and oil seed products, taking into account factors such as raw material quality, processing parameters, and end-product requirements.

Subject and code:PS 595.2 Spices and Plantation Crops Technology

Course Outcomes:

- CO 1 Students will understand practical knowledge on specialized production techniques of vegetables and spices.
- CO 2 Students understand will Importance of vegetables & spices in human nutrition improved and national economy.
- CO 3 Students will be acquainted with the knowledge of profitable crop Production technology.
- CO 4 To understand the scientific cultivation methods of plantation crops like coconut, arecanut, cashew, tea, coffee & rubber.
- CO 5 To know more about origin, area, climate, soil, improved varieties and cultivation practices such as time and methods of sowing, transplanting techniques, planting distance, fertilizer requirements, irrigation, weed management, harvesting and yield.

Subject and code:PS 596.2 Research Methodology and Ethics**Course Outcomes:**

- CO 1 To understand the intricacies of each micronutrient in growth and development of humans
- CO 2 To understand the basis of human nutritional requirement and recommendations through the life cycle
- CO 3 To analyze the nutrient – nutrient and nutrients – drug interaction. Students will be familiar with factors affecting for the absorption of nutrients
- CO 4 To understand the implications of deficiency and toxicity of micronutrients and to assess their status in the body
- CO 5 Demonstrate knowledge of research processes (reading, evaluating, and developing)
- CO 6 Perform literature reviews using print and online databases

Subject and code:P0 598.2 Essentials of Food Science**Course Outcomes:**

- CO 1 Understand the history and evolution of food processing
- CO 2 Acquire knowledge of the structure, composition, nutritional quality and post-harvest changes in various plant foods.
- CO 3 Understand the structure and composition of various animal foods.

Semester-III**Subject and code:PH 591.3 Food Microbiology****Course Outcomes:**

- CO 1 Learn the fundamentals of food microbiology.
- CO 2 Identify the novel methods for detection of immunological components.
- CO 3 Acquire the knowledge on various criteria for microbiological assessments in various food products

Subject and code: PH 592.3 Nutraceuticals and Functional Foods in Human Health**Course Outcomes:**

- CO 1 Acquire knowledge on various bio molecules showing health benefits.
- CO 2 Understand various physiological and biochemical aspects of life threatening and chronic diseases.
- CO 3 Apply their knowledge regarding extraction, isolation, characterization and application of nutraceuticals in food industries.
- CO 4 Identify various aspects about safety, quality and toxicology of food products including, nutraceutical and functional foods.

Subject and code: PO 595.3 Basics of Food Safety and Labelling
Course Outcomes:
<p>CO 1 Understand the concept of food safety, types of hazards and their control measures.</p> <p>CO 2 Identify and prevent potential sources of food contamination and comprehend the need of hygiene and sanitation for ensuring food safety.</p> <p>CO 3 Understand National and International Food Safety Laws and Regulations.</p> <p>CO 4 Practical knowledge to detect and quantify microorganisms from various routes of contamination of food.</p> <p>CO 5 Understand various areas of Food Safety & Quality Assurance.</p> <p>CO 6 Grasp knowledge of the quality assessments of food products.</p> <p>CO 7 Comprehend food quality managements systems.</p> <p>CO 8 Apprehend the Indian and International food laws.</p> <p>CO 9 Conceive the concept of adulteration in food products.</p>
Semester-IV
Subject and code: PH 591.4 Meat, Fish, and Poultry Processing Technology
Course Outcomes:
<p>CO 1 Understand the need and importance of livestock, egg and poultry industry</p> <p>CO 2 Understand the structure, composition and nutritional quality of animal products.</p> <p>CO 3 Understand the concept and methods of processing and preservation of animal foods.</p> <p>CO 4 Understand the technology behind preparation of various animal food products and by-product utilization</p> <p>CO 5 Understand egg production practices and egg preservation methods</p> <p>CO 6 Understand factors affecting egg quality and measures of egg quality.</p>
Subject and code: PH 592.4 Food Packaging
Course Outcomes:
<p>CO 1 Comprehend the overview of the scientific and technical aspects of food packaging</p> <p>CO 2 Understand packaging machinery, systems, testing</p> <p>CO 3 An insight to food packaging laws and regulations</p> <p>CO 4 An understanding of packaging requirement and packaging designing of food.</p> <p>CO 5 Comprehend advance knowledge on the properties and production of various packaging materials and effect of various indicators used in supply chain management to indicate the food quality</p> <p>CO 6 Understand various types of scavengers and emitters for improving the food shelf life.</p> <p>CO 7 Learn about consumer response about new packaging systems and safety and legislative requirements</p> <p>CO 8 Acquaint about food-package interaction between package-flavour, gas storage systems for food storage, recycling and use of green plastics for reducing the pollution and their effect on food quality.</p>
Subject and code:
PH 593.4 Food Biotechnology
Course Outcomes:
CO 1 Students shall become aware of fundamentals of food biotechnology, genetics and

also gain basic knowledge of cell culture technology.

CO 2 Have developed an understanding of the application of biotechnology in animal, plant and food production.

CO 3 Have acquired practical skills in using nucleic acids sequences and bioinformatics data on computers.

CO 4 Be able to recommend appropriate measures to solve technical problems

Subject and code: PS 595.4 Food Safety and Quality Control

Course Outcomes:

CO 1 Understand, use and apply the knowledge, skills of quality management in food processing.

CO 2 Understand and critically evaluate the presence of contaminants in food quality assurance.

CO 3 Understand the chemical, technological and toxicological aspects of food additives in food preservation.

CO 4 Understand the concept of food safety, types of hazards and their control measures

CO 5 Comprehend the need of hygiene and sanitation for ensuring food safety

Department Name:	P 600 A M.C.A.
PROGRAMME OUTCOMES	
<p>PE01 Excel in professional career and/or higher education by acquiring knowledge in various sub-domains related to the field of computer science and applications</p> <p>PE02 Analyze real life problems, design computing systems appropriate to its solutions that are technically sound, economically feasible and socially acceptable</p> <p>PE03 To develop the abilities to face the changing trends and career opportunities in computer application</p> <p>PE04 Exhibit professionalism, ethical attitude, communication skills, team work in their profession and adapt to current trends by engaging in life long learning</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PO1 Computational Knowledge: Apply knowledge of mathematics, computing fundamentals, data analytics, software engineering concepts and application development knowledge appropriate for the computing specialization</p> <p>PO2 Problem Analysis: Identify, formulate, design and develop applications to analyze and solve computer science related problems</p> <p>PO3 Design /Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public</p>	

health and safety, and the cultural, societal, and environmental considerations.

PO4 Conduct investigations of complex Computing problems:

Use appropriate review literatures, research methodologies, techniques and tools, design, conduct experiments, analyze and make inferences from the resulting data.

PO5 Modern Tool Usage:

Create, Select, Integrate and apply efficiently appropriate techniques, resources, and modern computing tools to solve complex problem, with an understanding of the limitations.

PO6 Professional Ethics:

Understand and work with a professional context pertaining to ethics with appropriate societal and cyber regulations in a global economic environment

PO7 Life-long Learning:

Recognize and develop the passion for a continued career development and progress as a computer professional

PO8 Project management and finance:

Apply the principles of management with computing knowledge to manage the projects effectively both as a team leader and team member on multidisciplinary environments

PO9 Communication Efficacy:

Communicate effectively with the computing community as well as society by being able to make effective presentations and design documentation with respect to appropriate standards.

PO10 Societal and Environmental Concern:

Ability to utilize the computing knowledge efficiently in projects to analyze the global and local impact of business solutions for societal, environmental, and cultural aspects

PO11 Individual and Team Work:

Develop the ability to act as a member or leader for the fulfillment of diverse teams in multidisciplinary environments.

PO12 Innovation and Entrepreneurship:

Develop and design innovative methodologies to create value as a successful entrepreneur and wealth for betterment of individual and society at large.

Subject and code:PH 601.1 [E1] : DATABASE MANAGEMENT SYSTEMS

Course Outcomes:

1. Very good understanding about data and database systems.
2. Describe the fundamental elements of relational database management systems
3. Understand the design of relational databases through the use of Entity-Relationship Diagrams and Normalization procedures
4. Develop basic skills in the use of SQL in defining and creating a database, inserting and modifying entries in a table, creating views and other data objects

5. Effective way of manipulating the database to produce useful decision making information for management & analytics. Using data in the distributed environment

Subject and code:

PH 601.1 [E2] : DATABASE DESIGN AND IMPLEMENTATION

Course Outcomes:

1. Understand the limitations of traditional file management systems, different data models
2. Understand the need for an efficient management system to administer the data repository of any organization, designing relational database systems with normalization concept
3. Identify the importance of data consistency and also how data integrity ignorance affects any business organization
4. Providing data security through different means (such as Views)
5. Identifying the power of Query language - generating flexible and customized reports
6. Providing complex integrity constraints through the use of Triggers
7. Know the Power of procedural SQL, writing Stored procedures, functions and packages
8. Gain knowledge about the emerging trends in database technology and also schema less database

Subject and code: PH 601.1 [E3] : NoSQL with MongoDB

Course Outcomes:

After successful completion of the course students should be able to

1. Understand that data need not be structured for storage, retrieval and manipulation
2. Define, compare and use the four types of NoSQL Databases (Document-oriented, Key Value Pairs, Column-oriented and Graph).
3. Demonstrate an understanding of the detailed architecture, define objects, load data, query data and performance tune Column-oriented NoSQL databases.
4. Explain the detailed architecture, define objects, load data, query data and performance tune Document-oriented NoSQL databases.
5. Using NoSQL tools efficiently in the academic projects
6. Understands different types of Indexing/sharding and marinating NoSQL data. Comparing the power of different NoSQL tools

Subject and code: PH 602.1 [E1] DATA STRUCTURES AND ANALYSIS OF ALGORITHMS

Course Outcomes:

1. Ability to understand and implement algorithms and are able to calculate the time and space complexities.
2. Able to implement and apply stack and queue data structure in different applications.
3. Ability to implement linked list and concepts and apply list concepts to solve different problems.
4. Ability to implement tree data structure and tree data structure to solve expressions
5. Ability to implement and apply different searching and sorting methods.

Subject and code: PH 602.1 (E2) DATA STRUCTURES AND GRAPH THEORY

Course Outcomes:

1. Ability to program using structures, function pointers, classes and objects.
2. Ability to implement and apply stack, queue and list data structures in different applications.
3. Ability to implement and apply tree data structure in different applications
4. Ability to program different searching and sorting methods and how to apply these in different applications
5. Ability to implement and apply different graph methods in different applications

Subject and code: PH 602.1 (E3) ADVANCED DATA STRUCTURES AND ALGORITHMS

Course Outcomes:

1. Understand what is data structure and able to implement different programs using structures, functions, pointer and memory allocation functions
2. Skill to program stack, queue using array and apply these algorithms to different applications.
3. Ability to program binary tree, binary search tree, AVL tree and other tree data structures and traverse and represent expressions using tree data structure.
4. Ability to program different searching and sorting algorithms using cpp programming language.
5. Ability to create graph using array and using linked list. Ability to find shortest path in graph, able to traverse the graph

Subject and code: PH 603.1 [E1]: OBJECT ORIENTED PROGRAMMING WITH JAVA

Course Outcomes:

1. Develop simple Java applications using control structures
2. Design user defined classes and create instances for them. Learn to invoke methods on those objects. Create programs to execute various methods of String and StringBuffer classes.
3. Develop applications to illustrate simple inheritance and multilevel inheritance. Simulate multiple inheritance with the help of interfaces.
4. Develop programs to illustrate synchronization between multiple threads. Also to handle exceptions caused by them.
5. Students will be able to build Java applications where they can read from and write to files. Design generic classes and test them.

Subject and code: PH 603.1 [E2] : ENTERPRISE COMPUTING WITH ADVANCED JAVA

Course Outcomes:

Course Outcomes:

1. To analyze various JEE components. To understand about distributed applications
2. To Develop server side programs using Servlets
3. To Develop server side web applications using JSP
4. Update and retrieve the data from the databases using Apache Derby
5. Create session and entity beans using EJB

Subject and code: PH 603.1 [E3]: ENTERPRISE COMPUTING: JAVA EE Frameworks

Course Outcomes:

Course Outcomes:

1. Developing server side web applications using Servlet, JSP,
2. Update and retrieve the data from the databases using Apache Derby. Develop web applications using various JSTL tags

3. Develop enterprise applications using EJB
4. Create simple web applications using JSF framework
5. Map Java classes to database tables using Hibernate

Subject and code: PH 604.1 [E1]: WEB DESIGN with HTML 5, CSS, Java Script

Course Outcomes:

Learning Outcomes: At the end of the course, the

- Students will be able to develop websites and web based projects.
- Students can be employed on entry-level jobs of web development in software industry.
- Students will be able to develop interactive and dynamic webpages

Subject and code: PH 604.1[E2]: WEB PROGRAMMING WITH PHP and MYSQL

Course Outcomes:

Course Outcomes:

1. Students will be able to develop static webpages using HTML elements
2. Students will be able to design HTML forms. Perform graphics design using CANVAS, SVG. They will be able to play audio and video in web pages
3. Ability to style HTML pages using CSS
4. Develop simple JavaScript programs
5. Ability to develop interactive web pages using JavaScript

Subject and code: PH 604.1[E3] WEB APPLICATION DEVELOPMENT USING PYTHON

Course Outcomes:

At the end of this course students will be able

1. To define the structure and components of a Python program and to design and program Python applications.
2. To learn how to use lists, tuples, dictionaries in Python programs, to read and write files in Python, to design object oriented programs with Python classes.
3. To learn how to use exception handling in Python applications for error handling and do CRUD operations.
4. To use various libraries in Python and successfully configure and install Django framework
5. To develop a secure and robust web applications using Django framework

Subject and code: PH 605.1 P DBMS and Data Structures Lab

Course Outcomes:

Course Outcomes: At the end of the course, the candidate will be able to learn

- To implement the data structures at the systems level
- Manage the Time and Space Complexity of the programmes
- Comprehend the art of programming and, the structure and meaning of basic Java programs,
- Design and build programs using problem-solving techniques such as top-down design,
- Modify, compile, debug, and execute Java programs,
- Understand how to create graphical interfaces and Java applets for a Web page
- Create databases using popular database management system products
- Solve problems by constructing database queries using the Structured Query Language
- Develop insights into future data management tool and technique trends
- Recommend and justify strategies for managing data security, privacy,

audit/control, fraud detection, backup and recovery
Subject and code: PS 606.1 [E1] STATISTICAL TECHNIQUES FOR COMPUTING
Course Outcomes:
<ol style="list-style-type: none"> 1. Select appropriate statistical techniques for summarizing and displaying data 2. Analyze and draw inferences from data using appropriate statistical methods. 3. Analyze the dispersion in the data and draw inference. 4. Understand the concept of a frequency distribution for sample data, and be able to summarize the distribution by diagrams and statistics. 5. Understand correlation and regression, and be able to make predictions and understand their limitations.
Subject and code: PS 606.1 [E2] PROBABILITY AND STOCHASTIC PROCESS
Course Outcomes:
<ol style="list-style-type: none"> 1. Calculate the probabilities and identify the various types. 2. Apply inverse probability concepts and solve problems. 3. express the features of discrete random variables and formulate the distribution functions. 4. Identify the various distributions and apply them. 5. Classify a stochastic process according to whether it operates in continuous or discrete time and whether it has a continuous or a discrete state space. To Understand the concept of Markov chains and study the transition diagram.
Subject and code: PS 606.1 [E3] OPERATIONS RESERACH
Course Outcomes:
<ol style="list-style-type: none"> 1. Calculate the probabilities and identify the various types. 2. Apply inverse probability concepts and solve problems. 3. express the features of discrete random variables and formulate the distribution functions. 4. Identify the various distributions and apply them. 5. Classify a stochastic process according to whether it operates in continuous or discrete time and whether it has a continuous or a discrete state space. 6. To Understand the concept of Markov chains and study the transition diagram.
Subject and code: PS 607. 1 P Java & Web Development Lab
Course Outcomes:
<ol style="list-style-type: none"> 1. Use the Java SDK & JRE Environment to Create, Debug and Run Simple Java Programs. 2. Analyze the Problem, Identify the Requirements & Features of Applications and Utilities 3. Implement Object Oriented Concepts for Solving Real Problem. 4. Develop Small Applications, Utilities, and Web Applications Using AWT, Event and Layout Manager
Subject and code: PS 608.1 Business Communication/Entrepreneurship
Course Outcomes:
<p>Course Outcome : At the completion of this unit, students will:</p> <ul style="list-style-type: none"> • Understand the business models that underlie Cloud Computing • Understand the importance of protocols and standards in computing. • Understand the issues involved in distributed computing • Ability to deploy applications using the Unicore Grid middleware • Ability to programme using the APIs of Cloud Computing • Ability to created Virtual Machine images and to deploy them on a Cloud.
Semester-II

Subject and code: PH 601.2 [E1] CLOUD COMPUTING WITH AMAZON WEB SERVICES**Course Outcomes:**

1. Describe the key technologies, architecture, strengths, limitations and applications of cloud computing
2. Explain the types and service models of cloud.
3. Understand security implications in cloud computing
4. Design Cloud Services and Set a private cloud
5. Create and automate infrastructure to design cost-effective, highly available applications
6. Integrate AWS services with your application to meet and exceed non-functional requirements

Subject and code: PH 601.2 [E2] Grid and Cluster Computing**Course Outcomes:**

At the end of the course students are able to

1. understand fundamentals of cluster computing and Environments
2. To enable resource sharing across networks.
3. To integrate heterogeneous computing systems and data resources with the aim of providing a global computing space.
4. To manage and schedule the resources in grid environments.
5. To know the standards and protocols used.
6. To Know the middleware in grid computing.
7. To understand the latest advances in the field of computation to optimize the utilization of resources.

Subject and code: PH 601. 2 [E3] HIGH PERFORMANCE COMPUTING**Course Outcomes:**

At the end of the course, the candidate will be able to

1. To Study various computing technology architecture.
2. To know Emerging trends in computing technology.
3. To highlight the advantage of deploying computing technology.
4. demonstrate understanding of learned concepts of parallel algorithm design, performance evaluation, communication operators by writing algorithms and programs exploiting parallel architecture
5. analyze the efficiency of parallel algorithms designed for matrix, graph and sorting operations

Subject and code: PH 602.2 E1: SOFTWARE ENGINEERING and UML**Course Outcomes:**

1. Plan and deliver an effective software engineering process, based on development lifecycle models.
2. Employ group working skills including general organization, planning and time management and negotiation.
3. Apply software engineering principles and techniques.
4. Understand the principles of large scale software systems, and the processes that are used to build them
5. Analyze a problem, and identify and define the computing requirements appropriate to its solution.
6. Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.

Subject and code: PH 602.2 E2: OBJECT ORIENTED SOFTWARE ENGINEERING
Course Outcomes:
<ol style="list-style-type: none"> 1. Display understanding and the ability to apply object-oriented programming principles. 2. Have detailed knowledge of the software development lifecycle. 3. Apply skills relevant for academic progression and career development within the sector. 4. Explore and analyze different analysis and design models, such as OO Models, Structured Analysis and Design Models, etc. 5. Show an ability to use the graphical UML representation using tools. 6. Apply software engineering perspective through software design and construction, requirements analysis, verification, and validation, to develop solutions to modern problems such as security, data science, and systems engineering.
Subject and code: PH 602.2 E3: AGILE SOFTWARE DEVELOPMENT
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand concept of agile software engineering and its advantages in software development. 2. Recognize various agile methods. 3. Understand the principles behind the agile approach to software development 4. Deconstruct user stories into tasks and ideal day estimates. 5. Differentiate between the testing role in agile projects compared with the role of testers in non-agile projects.
Subject and code: PH 603.2 (E1): Mobile Application Development using Android
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand the architecture, working and environmental setup of Android 2. Design and Implement simple GUI based Android Apps that handle user input and provide information 3. Implement Android apps that are able to receive broadcasted messages, act as content provider or receiver and run background services. 4. Create Android Apps that can manipulate data from various data stores such as internal, external memory and also SQLite as a Database. 5. Design and Work with advanced sensors of the phone and manipulate Telephony and SMS in an Android Phone.
Subject and code: PH 603.2 (E2): Cross Mobile App Development using React Native
Course Outcomes:
<ol style="list-style-type: none"> 1. Write JavaScript code for any particular scenario and also be familiar with the syntax of JavaScript 2. Create simple React JS based User Interfaces and UI Components 3. Create React Native apps that simultaneously work in Android and iOS 4. To Use Widgets and components to create professional mobile applications 5. To Create Cross Platform apps that makes use of all the advanced features that React Native has to offer.
Subject and code: PH 603.2 (E3): Mobile App Development for iOS with Swift
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand the working of mobile devices compared to the various architectures available

2. Do programming with the Swift Language
3. Use advanced concepts of Swift to solve complex problems
4. Use Widgets and components to create professional iOS applications
5. Develop iOS apps to perform the various advanced tasks like Database handling.

Subject and code: PH 604.2 P Cloud Computing and Mobile App Development Lab

Course Outcomes:

Course Outcome : At the completion of this unit, students will:

- Understand the business models that underlie Cloud Computing
- Understand the importance of protocols and standards in computing.
- Understand the issues involved in distributed computing
- Ability to deploy applications using the Unicore Grid middleware
- Ability to programme using the APIs of Cloud Computing
- Ability to created Virtual Machine images and to deploy them on a Cloud.

Subject and code: PS 605.2 [E1]: NATURAL LANGUAGE PROCESSING

Course Outcomes:

1. Understand natural language processing and to learn how to apply basic algorithms in this field.
2. Understand POS tagging and context free grammar for English language
3. Learn how model linguistic phenomena with formal grammars; and to design, implement and test algorithms for NLP problems
4. Understand the mathematical and linguistic foundations underlying approaches to the various areas in NLP
5. Apply NLP techniques to design real world NLP applications such as machine translation, text categorization, text summarization, information extraction

Subject and code: PS 605.2 [E2]: IMAGE PROCESSING AND PATTERN RECOGNITION

Course Outcomes:

1. Understand image formation, role of human visual system plays in perception of gray and color image data.
2. Apply image processing techniques in both the spatial and frequency (Fourier) domains. Apply different de-noising models to recover original image.
3. Design image analysis techniques, image segmentation and to evaluate the Methodologies for segmentation. Conduct independent study and analysis of feature extraction techniques.
4. Identify different pattern recognition techniques and apply them in real world problems.
5. Learn how to classify patterns. And build a statistical classifier and will learn how to use other classifiers.
6. Be able to write programs in Matlab language for digital manipulation of images; image acquisition; preprocessing; segmentation; Fourier domain processing.

Subject and code: PS 605.2 [E3] : Bioinformatics Algorithms, Databases and Tools

Course Outcomes:

1. Gain a knowledge of simple biology and Bioinformatics
2. Gain knowledge of database and tools with respect to Genomics and Proteomics; usage of different biological databases for understanding protein domains and families
3. Understand the algorithmic complexity of Biological algorithms; application of algorithms to find motifs in proteins
4. Usage of gene prediction algorithms and its statistical approaches

5. Usage of HMM for Profiling; applying graph algorithm for protein sequencing
Subject and code: PS 606.2 [E1] : DATA WAREHOUSING AND DATA MINING
Course Outcomes:
<ol style="list-style-type: none"> 1. List the definitions, concepts and architectures of data warehousing and data mining 2. Demonstrate the impact of business reporting, information visualization and dashboards 3. Explain data mining, support vector machines and text mining. 4. Define social impacts of data mining. 5. Handle classification through statistical methods used in prediction.
Subject and code: PS 606.2 [E2] : BUSINESS INTELLIGENCE & ADVANCED DATA MINING
Course Outcomes:
<ol style="list-style-type: none"> 1. Identify the major frameworks of business intelligence (BI). 2. List the definitions, concepts and architectures of data mining 3. Demonstrate the impact of business reporting, information visualization and dashboards 4. Handle classification through statistical methods used in prediction. 5. Explain data mining, neural networks, support vector machines, text mining, web mining and social network analysis.
Subject and code: PS 606.2 [E3] : DATA SCIENCE AND ANALYTICS
Course Outcomes:
<ol style="list-style-type: none"> 1. Use data management techniques to store data 2. Use statistical methods and visualization to quickly explore data 3. Apply statistical and computational analysis to make predictions based on data 4. Implement data-intensive computations on cluster and cloud infrastructures. 5. Effectively communicate the outcome of data analysis using descriptive statistics and visualizations
Subject and code: PS 607. 2 P Advanced Computing and Data Mining Lab
Course Outcomes:
<ul style="list-style-type: none"> • examine the concepts of data warehousing and OLAP; • apply the concepts of BI and DM techniques for clustering, association, and classification; • understand the operation procedures of BI projects in an organization; • select appropriate DM tools and methods to manipulate and achieve data; • apply DM concepts for formulating business strategies and programs to enhance business intelligence.
Subject and code: PH 608.2 : MINI PROJECT AND ADVANCED ENTREPRENEURSHIP
Course Outcomes:
<p>Research output with philosophical base and greater relevance to the society</p> <ul style="list-style-type: none"> • Quality research with scientific methodology • Production of good Research Reports • Original Research following ethical guidelines and practices in conducting the research and publication of papers. • More awareness on Intellectual property Rights and Patents.
Semester-III

Subject and code: PH 601.3 [E1] : FUNCTIONAL PROGRAMMING PARADIGM
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand the basic fundamentals data types, and function structure required for Haskell programming language. 2. Implementation of functions, loops, arrays, objects, and working with JSON data. 3. Implementation of files, I/O and Buffering. 4. Understand the basic fundamentals object-oriented, Scalars, Collections and functions required for Clojure programming language. 5. Implementation of vectors, list, queues and function for Clojure programming language.
Subject and code: PH 601.3 [E2] : INTERNET OF THINGS AND APPLICATIONS DEVELOPMENT
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand the basic networking model, internet/Web, networking equipment required for design of IoT. 2. Understand the basic IoT protocols, architecture, reference architecture, data representation, required for design of IoT. 3. Understand the basic of data link layer protocols and their feature for the design of IoT. 4. Understand the basic of user experience in design of IoT and multipurpose computer concepts, sensor for IoT design. 5. Understand the basic of networking, issues, challenges, communication patterns for the IoT design.
Subject and code: PH 601.3 [E3] : AUGMENTED AND VIRTUAL REALITY
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand the basic fundamental topics to consider for the design of Augment and Virtual Reality. 2. Understand the Software and Hardware needed for Augment and Virtual Reality. 3. Knowledge on fundamentals of Wearable Computers, scope, augmented Reality and their challenges. 4. Knowledge on fundamentals of Input, Output interface required for the design of Virtual Reality. 5. Knowledge on fundamentals of technology, features and visualization techniques required for design of Augment Reality.
Subject and code: PH 602.3 [E1] WEB DEVELOPMENT WITH ANGULAR .JS, NODE .JS
Course Outcomes:
<p>At the end of the course, students should be able to:</p> <ol style="list-style-type: none"> 1. Get introduced in the area of JavaScript's Role in recent web applications. 2. Acquire knowledge about client side java framework angularJs 3. Acquire knowledge about Building Applications using Angular JS. 4. Acquire knowledge about server side framework nodeJS
Subject and code: PH 602.5 [E2] CONTENT MANAGEMENT WITH JOOMLA & WORDPRES
Course Outcomes:
<p>At the end of the course, students should be able to:</p> <ul style="list-style-type: none"> • Create and deploy websites using CMS, including creating and editing content, adding functionality, and creating custom templates and themes. • Understand ongoing maintenance considerations with CMS websites.

Subject and code: PH 602.3 [E3] Blockchain Technology with Ethereum
Total No. of Le
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand what and why of Blockchain 2. Explore the major components of Blockchain 3. Learn about Hyperledger Fabric model and its Architecture 4. Learn about Hyperledger Composer and Explorer 5. Learn about Bitcoin, Ethereum 6. Learn about Ethereum Virtual machine, The Ethereum network. Applications development on Ethereum.
Subject and code: PH 603.3 (E1) Computing with C# and .NET Framework
Course Outcomes:
At the end of the course, students should be able to:
<ol style="list-style-type: none"> 1. Understand what is .NET Framework and how does it work 2. Develop Programs using various C# concepts 3. Design and develop full-fledged UWP applications using C# 4. Use any DB technology and create a dynamic UWP. 5. Gain knowledge in the area of .NET Core and develop applications using .NET Core
Subject and code: PH 603.3 (E2): Web Technologies and .NET Framework
Course Outcomes:
<ol style="list-style-type: none"> 1. Understand what is .NET Framework and Develop Programs using various C# concepts 2. design and develop full-fledged Web applications using ASP.NET With C# 3. Use any DB technology such as ADO.NET, LINQ or EF to create a Dynamic application. 4. Create and Consume Web Services and Develop ASP.NET MVC based applications; Use AJAX 5. Develop web applications using ASP.NET Core
Subject and code: PH 603.3 (E3) Cross Platform Development using .NET Cor
Course Outcomes:
At the end of the course, students should be able to:
<ol style="list-style-type: none"> 1. Understand what is .NET Framework and Develop Programs using various C# concepts 2. Design and develop full-fledged applications using .NET Core 3. Use DB technologies like Entity Framework and LINQ with .NET Core 4. Create and Deploy Web Applications using ASP.NET Core 5. Develop Professional Websites using ASP.NET Core, ASP.NET MVC Core and Razor View Engine
Subject and code: PH 604.3 P Web Application Development & .NET Lab
Course Outcomes:
<ul style="list-style-type: none"> • Identify important events and individuals in the history of human-computer interfaces. • Design and develop Windows application using different Windows technologies that use a variety of GUI controls and classes to fulfill specific user requirements. • Explain how event driven applications use threading to perform time-consuming operations. • Demonstrate how to use specific features of the C# programming language to

write object-oriented programs and handle run-time errors.

- Explain in a public presentation how user interfaces should be designed to accommodate human physiology and limitations.

Subject and code: PS 605.3 [E1]: Cognitive Computing and Artificial Intelligence

Course Outcomes:

1. Apply AI technique on current applications with cognitive psychology using connectionist approach
2. To design applications using computational cognitive neuroscience by applying techniques of cognitive computing and neural network theory
3. To Design intelligent agents for problem solving, reasoning and planning.
4. To implement AI systems with different approaches of knowledge representation, design AI systems with heuristic search techniques
5. To implement AI systems using statistical and symbolic reasoning, designing AI models using Bayes rule

Subject and code: PS 605.3 [E2] : Computational Intelligence and Machine Learning

Course Outcomes:

1. Gain a working knowledge of knowledge-based systems using neural networks
2. Implement intelligent systems technologies with neural network and fuzzy logic
3. Implement typical computational intelligence systems with various performance metrics and conducting the analysis
4. To implement machine learning models using Bayesian algorithm; implement applications using k-means clustering.
5. To implement machine learning models using decision trees & LDA and analyze the results.

Subject and code: PS 605.3 [E3] Deep Learning and Neural Networks

Course Outcomes:

1. To implement a neural network for an application of your choice using an available tool
2. To implement different memory network using programming language; develop applications using fuzzy logic.
3. Apply fuzzy logic to many real world problems.
4. To design and implement deep learning models using CNN and RNN
5. To implement deep learning models using autoencoders and transfer learning

Subject and code: PS 606.3 [E1]: BIG DATA ANALYTICS with MAP REDUCE AND HADOOP

Course Outcomes:

1. Identify and distinguish big data analytics applications from other applications and the use of Big Data.
2. Describe No SQL databases and understanding different concepts related to No SQL and its applications using MongoDB.
3. Understanding Hadoop and its advantage over the traditional database applications in solving practical problems
4. Writing programs using mapper and reducer.
5. Using Hive and Pig for analyzing and querying data and knowing the advantages over the traditional Data handling solutions.

Subject and code:PS 606.3 [E2]: BIG DATA ANALYTICS WITH SCALA AND SPARK

Course Outcomes:

1. Understand what Functional programming is and will know why classical data

- analysis techniques are no longer adequate
2. Understand the benefits that Spark and Spark SQL offers for processing structured and unstructured data.
 3. Understand conceptually how Spark SQL is used for Data Exploration, Data Munging and Data Streaming.
 4. Understand how Spark can be used for Machine Learning.
 5. Understand the use of PySparrk and Sparkr

Subject and code: PS 606.3 [E3] : BIG DATA VISUALIZATION USING TABLEAU

Course Outcomes:

- Upon successful completion of this course, the student will be able to:
1. Knowing the impact of Data visualization techniques and how it helps to better understand the data Topics in information design, interaction design and user engagement.
 2. Understand and apply the fundamental concepts and techniques in data visualization
 3. Solve specific real-world problems related to the visualization and interpretation of data analysis results using charts and maps.
 4. Getting to know Tableau public and using its various features.
 5. Working with different real time examples and understanding the impact of visualization in real life situations.

Subject and code: PS 607. 3 P Machine Learning & Big Data Lab

Course Outcomes:

- Upon completion of the subject, students will be able to
- examine the concepts of data warehousing and OLAP;
 - apply the concepts of BI and DM techniques for clustering, association, and classification;
 - understand the operation procedures of BI projects in an organization;
 - select appropriate DM tools and methods to manipulate and achieve data;
 - apply DM concepts for formulating business strategies and programs to enhance business intelligence.

Subject and code: PH 608.3 BUSINESS CONSULTANCY PROJECT

Course Outcomes:

- for the student to demonstrate:
- Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work.
 - Concepts to address specific management needs at the individual, team, division and/or organizational level
 - Practical applications of project management to formulate strategies allowing organizations to achieve strategic goals
 - A perspective of leadership effectiveness in organizations
 - Team-building skills required to support successful performance
 - Critical-thinking and analytical decision-making capabilities to investigate complex business problems to propose project-based solutions
 - Skills to manage creative teams and project processes effectively and efficiently

Subject and code: PA 609.3 SEMINAR AND TECHNICAL COMMUNICATION - II

Course Outcomes:

Gather, organize, summarize and interpret literature with the purpose of formulating a

proposal.
☐ Write a technical report summarizing state-of-the-art on an identified topic.
☐ Present the study using graphics and multimedia techniques.
☐ Define intended future work based on the technical review.
Semester-IV
Subject and code: PH 601.6 : INDUSTRY INTERNSHIP / PROJECT WORK
Course Outcomes:
CO 1 Gather, organize, summarize and interpret literature with the purpose of formulating a Research problem and working on it to propose a solution.
CO 2 Write a technical paper summarizing state-of-the-art on an identified topic.
CO 3 Present the study using graphics and multimedia techniques.
CO 4 Define intended future work based on the technical review.
CO 5 Publish the work in a reputed Journal of interest or present it in an international/national State/Regional conferences.

Department Name:	P 800 M.Sc. (Big Data Analytics)
PROGRAMME OUTCOMES	
<p>PEO1 To practice big data analytics and machine learning approaches, which include the study of modern computing using big data technologies and machine learning techniques focusing on industry applications.</p> <p>PEO2 To develop Numerical and Statistical skills that will play an important role in their Job role as data Scientist / data analytics in analyzing the problem at hand and give the appropriate and efficient solution.</p> <p>PEO3 Apply the concepts of Analytics to the real world problems by converting datasets to models in order to make better business decisions.</p> <p>PEO4 Apply the skills gained in the course to improve the research which would have a great impact on the societal development by emphasizing on how data can be collected and used in ethical and socially sensitive ways.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>Program Outcomes</p> <p>PO1 Statistical computing: Ability to understand the basic concepts of how to explore the datasets using statistical analysis techniques in Python and R.</p> <p>PO2 Mathematical Skills: Ability to understand and implement various algorithms which require strong hold on the mathematical skills</p> <p>PO3 Database management: Ability to Execute queries, implement views and joins, use MongoDB for various operations on unstructured data. Ability to Optimize business decisions and create competitive advantage with Big Data analytics and understand architectural concepts of Hadoop and map reduce paradigm</p> <p>PO4 Implementation using various software: This enables the students to develop strong programming skills required to handle</p>	

complex data and build algorithms that will provide efficient solutions to the problem at hand.

PO5 Machine learning:

Understand a wide variety of learning algorithm, how to evaluate models generated from data and apply the algorithms to a real problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models.

PO6 Enabling technologies:

Learn about the relationship between data science and natural language and audio-visual content processing

PO7 Natural language processing:

Understand approaches to syntax, semantics in NLP, to discourse, generation, dialogue and summarization within NLP and Understand current methods for statistical approaches to machine translation.

PO8 Value thinking:

Recognize important ethical issues that arise in various business contexts and professional practice; To Demonstrate an understanding of the ethical, social and economic environments in which those occur.

PO9 Advanced Statistical Analysis:

Mastering of a suite of methods and workflow styles that will enable the student to produce several new statistical analysis correctly and efficiently present the results from those analyses.

PO10 Societal development:

Identify the information security models and their characteristics, by analysing the different types of cryptographic and forensic methods. Identify and solve different cyber security threats that hamper the society.

PO11 Application of Skills:

Provide the knowledge and necessary skills to accomplish various analytics with respect to areas like health, HR, Travel, ... so that they are able to provide efficient analysis and interpretation.

Subject and code: PH 801.1: STATISTICAL METHODS

Course Outcomes:

CO 1 To design appropriate instruments to collect data effectively.

CO 2 To provide effective data visualization that will provide new insights from the data.

CO 3 To Organize, manage and present data effectively.

CO 4 To analyze statistical data graphically using frequency distributions.

CO 5 To Construct and interpret Contingency Tables

Subject and code: PH 802.1: PROBABILITY & STOCHASTIC PROCESS

Course Outcomes:

CO 1 To calculate the probabilities and identify the various types.

CO 2 To express the features of discrete random variables and formulate the distribution functions.

CO 3 To express the features of continuous random variables and formulate the distribution functions

CO 4 To Classify a stochastic process according to whether it operates in continuous or discrete time and whether it has a continuous or a discrete state space. To Understand the concept of Markov chains and study the transition diagram.

CO 5 To apply the concept of stationarity to the analysis of time series data in various contexts
Subject and code: PH 803.1: LINEAR ALGEBRA & LINEAR PROGRAMMING
Course Outcomes:
CO 1 Understand the basic concepts of linear Algebra
CO 2 Understand the concept of Random Numbers and its properties.
CO 3 Understand the principles of solving a set of linear equations,
CO 4 Familiarize with the methods involved in solving a set of linear equations.
CO 5 To model a problem as a linear programming problem
CO 6 Use the simplex method to solve small linear programming models by hand, given a basic feasible point.
Subject and code: PH 804.1P: COMPUTING FOR DATA SCIENCES LAB
Course Outcomes:
CO 1 To perform data analysis using the appropriate techniques.
CO 2 To know how convergence, takes place and use the appropriate methods.
CO 3 To generate random numbers and understand how a system can be simulated using them.
Subject and code: PS 805.1: DATABASE MANAGEMENT SYSTEM
Course Outcomes:
CO 1 Draw an ER Diagram for a given system by analysing the requirements
CO 2 Normalize the tables atleast to 3N form and perform various operations on tables that are thus created
CO 3 Appreciate and apply Graph database
CO 4 Execute queries, implement views and joins, use MongoDB for various operations on unstructured data
CO 5 Work with Hadoop Ecosystem and also implement database security in SQL, NoSQL and Hadoop
Subject and code: PS 806.1: PYTHON PROGRAMMING
Course Outcomes:
CO 1 Choose the right data type or Collection module for any given set of data.
CO 2 Use conditional statements and loops to manipulate; Create, use & reuse functions created from python
CO 3 Open, Read and Write a File from Python and also to import and use various logical modules in python
CO 4 Handle any type of exceptions that might be raised from a typical program
CO 5 Create classes and objects to perform operations and also to perform CRUD Operations on a SQLite Database
Subject and code: PS 807.1 P: DBMS & PYTHON PROGRAMMING LAB
Course Outcomes:
CO 1 Solve real world problems using python as a programming language
CO 2 Create applications that handle files and include various packages to solve complex issues
CO 3 Create a completely data driven application that includes exception handling and perform all database related operations.
CO 4 Create a table, Execute complex and nested queries, create views and joins and also execute cursors and triggers using Oracle SQL
CO 5 Use MongoDb to create Database, Collection, Document etc. and also understand

Hadoop Ecosystem
SEMESTER – II
Subject and code: PH 801.2: MACHINE LEARNING - I
Course Outcomes:
<p>CO 1 To implement machine learning models with linear regression</p> <p>CO 2 To design applications using Logistic regression by using the methodology to avoid overfitting</p> <p>CO 3 To design systems using Perceptron algorithm</p> <p>CO 4 To implement machine learning systems using SVM</p> <p>CO 5 To implement machine learning models using k-means clustering by applying dimensionality reduction and anomaly detection</p>
Subject and code: PH 802.2: ENABLING TECHNOLOGIES FOR DATA SCIENCE – I
Course Outcomes:
<p>CO 1 To understand data mining principles and will identify appropriate datamining algorithms to solve real-world problems. To understand the strength and weakness of algorithms.</p> <p>CO 2 To design a data mart or data warehouse for any organization. To design data warehouse with dimensional modelling and apply OLAP operations.</p> <p>CO 3 To learn methods in integrating and interpreting the data sets and improving effectiveness, efficiency and quality for data analysis.</p> <p>CO 4 To predict categorical class labels (discrete or nominal) and classifies data (constructs a model) based on the training set and the values (class labels) in a classifying attribute and uses it in classifying new data and also predicts unknown or missing values.</p> <p>CO 5 To identify clusters in multivariate data, apply normalization techniques, and correctly interpret the output of different clustering procedures. And to describe complex data types with respect to spatial and temporal data mining.</p> <p>Electives (Choose 1)</p>
Subject and code: PH 803.2 (E1): OPERATIONS RESEARCH
Course Outcomes:
<p>CO 1 To Proficiently deal with the tools for optimization.</p> <p>CO 2 To Develop an understanding of the foundation of classic continuous optimization problems and to identify the convexity, smoothness, feasible region and dual reformulation.</p> <p>CO 3 To proficiently allocate scarce resources to optimize and maximize profit or minimize loss and facilitates the optimal method of allocating jobs to persons.</p> <p>CO 4 To facilitate with mathematical and computational modeling of real decision-making problems.</p> <p>CO 5 To construct and analyse priority queuing systems.</p>
Subject and code:PH 803.2 (E2): CLOUD COMPUTING
Course Outcomes:
<p>CO 1 After successfully completing the course the students will have an understanding of:</p> <p>CO 2 Apply the fundamental concepts in data centers to understand the trade-offs in power, efficiency and cost.</p> <p>CO 3 Discuss system virtualization and outline its role in enabling the cloud computing system model.</p> <p>CO 4 Illustrate the fundamental concepts of cloud storage and demonstrate their use in</p>

storage systems
CO 5 Illustrate the fundamental concepts of web services.
CO 6 Analyze various cloud programming models and apply them to solve problems on the cloud.

Subject and code: PH 803.2 (E3): NATURAL LANGUAGE PROCESSING

Course Outcomes:

CO 1 Analyse syntax, semantics, and pragmatics of NLP. Ability to develop simple N-gram models
CO 2 Perform POS tagging on simple English sentences using Hidden Markov model
CO 3 Develop grammars for some simple English sentences, ability to draw parse trees. Apply different parsing techniques
CO 4 Analyse syntactic, semantic and pragmatic ambiguities, learn to apply supervised and unsupervised word-sense disambiguation.
CO 5 Analyse different Machine translation approaches.

Subject and code: PH 803.2 (E4): UNIX PROGRAMMING

Course Outcomes:

CO 1 Students are able to know an overview of Unix operating system and uses of shell commands.
CO 2 Students will able to understand the concept of I-node and its use with applications of grep commands.
CO 3 Students get know about user and program interface with some system calls requirement and its applications.
CO 4 Students are able to know use of signaling and importance of Inter process communications.
CO 5 Students will understand the importance and application of inter-process communications

Subject and code: PH 803.2(E5): OPERATING SYSTEMS

Course Outcomes:

CO 1 Students are able to understand the basics of operating systems with need and working.
CO 2 Students will able understand the fundamentals of UNIX operating system with signals and system class.
CO 3 Students will able to understand fundamentals of concurrent process and concept of mutual exclusion and implementation of semaphores.
CO 4 Students are able to understand importance of Inter process communications resulting deadlocks which can be prevented or avoided with some algorithms.
CO 5 Students will understand the importance and benefits of virtual memory. The file structure of UNIX operating system.

Subject and code: PH 803.2 (E6): MULTIVARIATE STATISTICS:

Course Outcomes:

CO 1 To identify the most appropriate statistical techniques for a multivariate dataset and carry out and apply commonly used multivariate data analysis techniques, and interpret results
CO 2 To carry out a principal component's analysis Assess how many principal components are needed and Interpret principal component scores.
CO 3 To classify data using appropriate algorithms.
CO 4 To describe the difference between Factor Analysis (FA) and Principal Component

Analysis (PCA) and will be able to extract factors that describe the data.
CO 5 To Create a document retrieval system using k-nearest neighbors. -Identify various similarity metrics for text data.

Subject and code: PH 804.2P: MACHINE LEARNING AND DATA SCIENCE LAB - I

Course Outcomes:

- CO 1 Examine the concepts of data warehousing and OLAP;
- CO 2 Apply the concepts of BI and DM techniques for clustering, association, and classification;
- CO 3 Understand the operation procedures of BI projects in an organization;
- CO 4 Select appropriate DM tools and methods to manipulate and achieve data;
- CO 5 Apply DM concepts for formulating business strategies and programs to enhance business intelligence.

Subject and code: PS 805.2: FOUNDATIONS OF DATA SCIENCE

Course Outcomes:

- CO 1 Solve problems using basic graph theory
- CO 2 Applying various concepts relevant with high-dimensional data.
- CO 3 Understanding large structures, like the web and social networks, in building models.
- CO 4 Applying the use of singular value decomposition (SVD) for dimension reduction of high-dimensional data sets, and multi-dimensional scaling and its connection to principle component analysis.
- CO 5 Applying the concept of frequency moments of data streams and matrix algorithms in streaming model

Subject and code: PS 806.2: ADVANCED STATISTICAL METHODS

Course Outcomes:

- CO 1 To estimate population parameters using point and interval estimates.
- CO 2 To recognize the logic behind a hypothesis test and how it relates to the P-value.
- CO 3 To know the theoretical foundation of applied linear modeling, starting with the univariate models and then with multivariate data
- CO 4 To apply multiple linear regression analysis, differentiate between simple linear regression analysis and multiple linear regression analysis and predict the model and interpret it.
- CO 5 To apply the functional form of the logistic model and how to interpret model coefficients.

Subject and code: PS 807.2: VALUE THINKING

Course Outcomes:

- CO 1 Recognize important ethical issues that arise in various business contexts and professional practice;
- CO 2 Demonstrate an understanding of the ethical, social and economic environments in which those occur;
- CO 3 Demonstrate critical thinking skills required for the successful practice of management and the professions within the framework of societal values;
- CO 4 Demonstrate confidence in introducing ethical considerations into professional and managerial decision making and explaining their importance to others; and
- CO 5 Use their ethical imaginations in resolving dilemmas and enhancing business decision-making.

Subject and code: PS 808.2P: PROGRAMMING FOR BIG DATA AND ADVANCED

STATISTICAL METHODS LAB
Course Outcomes:
<p>CO 1 To perform machine learning techniques such as clustering and classification effectively.</p> <p>CO 2 To apply the concepts of BI and DM techniques for clustering, association, and classification;</p> <p>CO 3 To apply the graph theory algorithms to real data and analyze appropriately.</p> <p>CO 4 To use appropriate statistical testing criteria based on the problem.</p> <p>CO 5 To evaluate and apply ANOVA to the problem at hand.</p> <p>CO 6 To identify and apply appropriate regression models considering all the assumptions.</p> <p>CO 7 To perform binary output models using logistic regression.</p>
Subject and code: OE 809.2: STATISTICAL DATA ANALYSIS USING R
Course Outcomes:
<p>CO 1 Ability install R programming language on windows, Linux and Mac operating systems and able to program simple R programs.</p> <p>CO 2 Ability to use inbuilt R functions to work on objects, matrix, vectors, data frames and tables.</p> <p>CO 3 Ability to program summary and cumulative commands to apply it on tables and objects.</p> <p>CO 4 Ability to use stem and leaf plot on the dataset, histograms to represent the data and ability to use shapiro-wilk test, Kolmogorov-Smirnov test etc.</p> <p>CO 5 Ability to use students t-test, U-test, chi squared test montecarlo simulation and able apply these on different data sets.</p>
SEMESTER – III
Subject and code: PH 801.3: MACHINE LEARNING - II
Course Outcomes:
<p>CO 1 To implement classification models with decision tree and probabilistic classifiers; regression models with regression tree classifiers</p> <p>CO 2 To implement predictive models using SVM and Perceptron with usage of loss functions and gradient descent</p> <p>CO 3 To implement machine learning models with k-means clustering; models with collaborative filtering and implement EM algorithm</p> <p>CO 4 To implement machine learning systems using Ensemble models and graphical models</p> <p>CO 5 To implement models with genetic algorithm and working out gradient descent for large datasets</p>
Subject and code: PH 802.3: ENABLING TECHNOLOGIES FOR DATA SCIENCE - II
Course Outcomes:
<p>CO 1 Read data from persistent storage and load it into Apache Spark, - manipulate data with Spark</p> <p>CO 2 Understand working of spark sessions, functions to manipulate and analyze data using Spark data frames</p> <p>CO 3 Warehouse your data efficiently using Hive, Spark SQL and Spark Data Frames</p> <p>CO 4 Manipulate data using Scala and write programs that effectively use parallel collections to achieve performance</p> <p>CO 5 Recognize and apply design principles of functional programs</p>

Subject and code: PH 803.3 P: MACHINE LEARNING AND DATA SCIENCE LAB - I
Course Outcomes:
<p>CO 1 Demonstrate the knowledge of big data, data science, data analytics, distributed file systems, parallel Map Reduce paradigm, NoSQL, machine learning, etc.</p> <p>CO 2 Program and implement examples of big data and NoSQL applications using open source Hadoop, HDFS, Spark, Scala, etc.</p> <p>CO 3 Read current research papers and implement example research group project in big data.</p>
Subject and code: PS 804.3: DATA VISUALIZATION WITH TABLEAU & MODELLING IN OPERATIONS MANAGEMENT
Course Outcomes:
<p>CO 1 Understand and apply the fundamental concepts and techniques in data visualization</p> <p>CO 2 Design, develop, and evaluate effective visualizations and dashboards using various development tools</p> <p>CO 3 Solve specific real-world problems related to the Visualization and interpretation of data analysis results</p> <p>CO 4 Making use of patterns and insights in healthcare analytics</p> <p>CO 5 Visualize the analyzed data pertaining to retail industry</p>
Subject and code: PS 805.3 (E1): INTRODUCTION TO ECONOMETRICS & FINANCE
Course Outcomes:
<p>CO 1 To apply the above theories to empirical data or be able to develop new econometric theory</p> <p>CO 2 To apply the generalized method of moments (GMM) estimation and interpret the results.</p> <p>CO 3 To Use various economic models and methods to interpret and analyze real data in economics and finance.</p> <p>CO 4 To test cointegration among times series data using appropriate tests.</p> <p>CO 5 To perform Autoregressive conditional heteroscedasticity model and interpret the coefficients.</p>
Subject and code: PS 805.3 (E2): TIME SERIES ANALYSIS & FORECASTING
Course Outcomes:
<p>co 1 Know the basic time series structure and identify patterns.</p> <p>CO 2 Define the concept of stationarity and describe its importance in time series analysis</p> <p>CO 3 Test for non-stationarity that exists in the time series data by applying suitable tests.</p> <p>CO 4 Model times series data and use them efficiently to forecast.</p> <p>CO 5 Identify and deal with the missing data values in time series data.</p>
Subject and code: PS 805.3 (E3): BIOINFORMATICS
Course Outcomes:
<p>CO 1 Gain knowledge in using tools for implementing sequence alignment (BLAST, FASTA), MSA (ClustalW, T-Coffee etc), variants of BLAST</p> <p>CO 2 To implement Gibbs sampling and genetic mapping using tools available</p> <p>CO 3 Gain knowledge in using tools for implementing gene recognition and Transcriptomics</p> <p>CO 4 Gain knowledge in using tools for implementing HMM, finding motifs</p>

CO 5 Gain knowledge in using tools for implementing lattice models
Subject and code: PS 805.3 (E4): BIG DATA TECHNOLOGIES AND ARCHITECTURE
Course Outcomes:
CO 1 Identify the use of Hadoop for processing the data, configuring Hadoop cluster and exploring Hadoop distributed file system.
CO 2 Describe No SQL databases and understanding different concepts related to No SQL and its applications using Hive and Hbase.
CO 3 Writing map reduce programs using mapper and reducer.
CO 4 Writing map-reduce programs to perform K-Means clustering customizing partitioner and sort comparator.
CO 5 Learning the role of Inverted Index and usage of hadoop as a database.
Subject and code: PS 806.3 (E1): INTELLECTUAL PROPERTY RIGHTS IPR
Course Outcomes:
CO 1 Understand and distinguish between different Intellectual properties and also identify the procedures to protect Intellectual property
CO 2 Protect his own invention under patent and copyright specifically related to software. And also understand how one can derive revenue from protection of patents/copyrights
CO 3 Identify the importance of industrial design and its protection
CO 4 Recognizes the importance of different types of digital contracts and also finds mechanisms to protect digital documents
CO 5 Identify different types of cybercrimes and also will understand what are the remedies available under cyber law in the case of such unlawful activities
Subject and code:PS 806.3 (E2): CYBER SECURITY
Course Outcomes:
CO 1 Understand the basics of security attacks and threat model
CO 2 Appreciate the vulnerabilities and threats posed by criminals, terrorist and nation states to national infrastructure
CO 3 Have a strong understanding of different cryptographic protocols and techniques and be able to use them.
CO 4 Apply methods for authentication, access control, intrusion detection and prevention.
CO 5 Identify and mitigate software security vulnerabilities in existing systems
Subject and code: PS 806.3 (E3): TEXT MINING
Course Outcomes:
CO 1 Ability to analyse structured, unstructured and semi-structured data. Understand about user experience of information seeking behaviour.
CO 2 Ability to analyse linguistic foundations, and various approaches to text mining.
CO 3 To analyse various text types, document formats and conversion, character encodings. Perform parts-of-speech tagging for simple English sentences.
CO 4 To distinguish few tasks of text extraction – keyword extraction, named entity recognition. Perform simple extraction from small text.
CO 5 To understand computational grammars, design and construction.
Subject and code: PS 806.3 (E4): ADVANCED ANALYTICS
Course Outcomes:
CO 1 Understand why IoT is used and how it is implemented and how networks and communication is used to implement IoT

- CO 2 Understand how identity management models are used in IoT, also understand why trust management is important for IoT environment
- CO 3 Understand the use of protocols which are used in different layers and how it is combined with other protocols down the layers to carry out the communication
- CO 4 Understand how data is stored in cloud and how it is represented using different application to carry out or execute different data analytics tools
- CO 5 Understand the concepts of data science for IoT analytics, how to organize data for analytics, and how to get benefits from IoT analytical tools.

Subject and code: PS 807.3 P: DATA VISUALIZATION WITH TABLEAU & OPERATION MANAGEMENT LAB

Course Outcomes:

- CO 1 Understand and apply the fundamental concepts and techniques in data visualization
- CO 2 Design, develop, and evaluate effective visualizations and dashboards using various development tools
- CO 3 Solve specific real-world problems related to the Visualization and interpretation of data analysis results
- CO 4 Making use of patterns and insights in healthcare analytics
- CO 5 Visualize the analyzed data pertaining to retail industry

Subject and code: PS 808.3: LAB ON ELECTIVES 1 & 2

Course Outcomes:

- CO 1 Model times series data and use them efficiently to forecast.
- CO 2 Use various models/ algorithms to gain information from the data and use it for better decision making
- CO 3 Architect multiple real life use cases
- CO 4 Apply the concepts of data science for IoT analytics, how to organize data for analytics, and how to get benefits from IoT analytical tools.
- CO 5 Analyze various text types, document formats and conversion, character encodings. Perform parts-of-speech tagging for simple English sentences

Subject and code: OE 809.3: BIG DATA & DESIGN THINKING

Course Outcomes:

- CO 1 Develop viable solutions to user challenges using the design thinking and hypothesis-driven innovation processes.
- CO 2 Gain user empathy through observation and interviewing, and develop user insights to identify unmet needs.
- CO 3 Use multiple brainstorming techniques to find innovative solutions.
- CO 4 Prototype a solution to a user challenge.
- CO 5 Develop and test a business model or business case to support the viability of the solution.

SEMESTER – IV

Subject and code: PH 801.4: INDUSTRY INTERNSHIP / PROJECT WORK / DISSERTATION

Course Outcomes:

- CO 1 Provide a structure that will enable students to make connections between what they learn in the classroom and on the job, to further develop analytical and interpersonal skills, and to practice business writing skills.
- CO 2 Ability to select and implement machine learning techniques and computing environment that are suitable for the applications under consideration.

- CO 3 Ability to recognize and implement various ways of selecting suitable model parameters for different machine learning techniques.
- CO 4 Ability to integrate machine learning libraries and mathematical and statistical tools with modern technologies like Hadoop and map reduce.

Subject and code: PS 802.4: DOMAIN KNOWLEDGE PROJECT

Course Outcomes:

- CO 1 Help the students to work on a specific research area by identifying the research gaps and building their topic.
- CO 2 Help the students to know the complete process of model building and apply the same based on the area of study.
- CO 3 Build the confidence to work on any project by considering all the aspects of research questions that needs to be addressed.
- CO 4 Develop the capability of the students to Create, Analyze and critically evaluate different analytical solutions.
- CO 5 Holistic approach to a problem-solving ability will be well developed

Department Name:	P 810 M.Sc. (Food Science, Nutrition and Dietetics)
-------------------------	--

PROGRAMME OUTCOMES

- PO 1: Scientific Knowledge: Knowledge on the fundamentals of food science and nutrition, food chemistry and biochemical changes during processing and preservation, nutraceuticals, also students will be able to understand and apply sensory evaluation of food.
- PO 2: Design/development of solutions: Design solutions for complex food engineering problems or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. Students will also develop an ability to work in modern tools and equipment's to analyze food composition, identify microorganism responsible for food spoilage.
- PO 3: Problem analysis: Understand the principles behind analytical techniques used in evaluating the biochemical properties of food; they will be above to identify the microorganism responsible for food spoilage and the methods to control the food spoilage.
- PO 4: Modern tool usage: Demonstrate knowledge in various engineering properties of food and its application in food industry, concept of mass balance and energy balance, unit operations in food processing, conventional and advanced methods of food preservation, methods of packing, post-harvest practices so as to develop food products and develop device for food industry.
- PO 5: Skill development and application: Develop specific skill based on their interest in bakery and confectionery, meat, poultry and fish processing, food fermentation, dairy processing. Students will also be able to apply the principles of Hazard Analysis and Critical Control Points (HACCP) to ensure safe food processing, Students will also have knowledge in regulations governing the manufacture and sales of the food products.
- PO 6: Research capabilities and Project management: Demonstrate the ability to apply knowledge through critical thinking, inquiry, analysis, and communication to produce scholarly and creative works in the form of an original oral scientific presentation, master's thesis/report, scientific manuscript for wide publication; participate as a member and leader in a team in order to manage multidisciplinary projects.
- PO 7: Ethics: Demonstrate awareness of their responsibilities (professional integrity, ethical behavior, etc.) and commit to the highest standards of academic and professional integrity and

ethical values.

PO 8: Environment and sustainability: Comprehend the impact food technologies and food waste processing solutions in societal and environmental contexts and promulgate the knowledge to strategize various approaches for sustainable development.

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings which are basic qualities for a Food technologist.

PO 10: Interpersonal Skills: Listening and effective speaking on food science problem with the small, medium and large-scale food business operators and with the society at large. For instance, ability to comprehend and published effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11: Life-long learning: Identify the need for and be prepared to engage in independent and life-long learning in the most extensive context of methods and technological advancement in the field of food science and technology.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: To inculcate technical writing and communicating ability for effective documentation and presentations and develop strong research aptitude through research work to enable the students to opt for higher levels of learning in the field of Food science and Technology.

PSO 2: To acquaint and equip students with professional and intellectual integrity, ethics of research and scholarship, impact of research outcomes on professional practices and responsibilities to contribute positively in the sustainable development of society.

PSO 3: To enable the students to get engaged in lifelong learning independently with the vigor and zeal and become capable to start-up their own businesses.

Subject and code: PH 811.1 Food Chemistry

Course Outcomes:

- To study the relationships between the structure and functional properties of food molecules
- To study chemical processes and interactions of all biological and non-biological components of food
- To understand physico-chemical parameters in food

Subject and code: PH 812.1 Principles of Food Processing and Preservation

Course Outcomes:

☐ To understand the source and variability of raw food material and their impact on food processing operations.

☐ To understand the physical, chemical and biological processes involved in conversion of raw materials into finished food products.

☐ To study the principles and current practices of different processing techniques and its effects on process parameters and product quality.

☐ To study the spoilage and deterioration mechanisms in foods and its preventive measures.

Subject and code: PH 813.1 Human Nutrition

Course Outcomes:

- Course learning outcome:
- The role of macronutrients in growth and development
- To evaluate the methodology and derivation of requirements for specific macronutrients.
- The metabolic functions of macronutrient and their role in health and disease

<ul style="list-style-type: none"> The implications of deficiency and toxicity of macronutrients 	
Subject and code: PS 816.1	Human Physiology
Course Outcomes:	
Course learning outcome:	
☐	Postgraduates should be able to understand the molecular biology of the cell.
☐	Students should be able to understand and recognize the role, physiology and anatomy of all the systems in the body
☐	Students should be able to understand and acquaint with the diseases related to the malfunctioning of the organ systems.
Subject and code: PS 817.1	Essentials of Micronutrients
Course Outcomes:	
Course learning outcome:	
	<ul style="list-style-type: none"> To understand the intricacies of each micronutrients in growth and development of humans To understand the basis of human nutritional requirement and recommendations through the life cycle To analyse the nutrient – nutrient and nutrients – drug interaction. Students will be familiar with factors affecting for the absorption of nutrients To understand the implications of deficiency and toxicity of micronutrients and to assess their status in the body
Subject and code: PS 818.1	Food Product Development
Course Outcomes:	
Objectives:	
☐	To study the consumer food preferences and choices
☐	To enhance the knowledge base for product development
☐	To study the sensory evaluation of foods and to understand basics statistics
Semester-II	
Subject and code: PH 811.2	Clinical and Therapeutic Nutrition
Course Outcomes:	
Course learning outcome:	
☐	Students will be able to intervene the metabolic anomalies of acute and chronic diseases
☐	They are able to demonstrate counselling techniques to facilitate behaviour change
☐	They will get knowledge to plan menu for various diseases based on their nutritional status and dietary needs
☐	The students will know the importance of a dietician in hospitals.
☐	The students will be able to know the feeding therapy's to be flowed in hospitalized/ critically ill patients
Subject and code: PH 812.2	Dietetics
Course Outcomes:	
Course learning outcome:	
☐	Students will have the knowledge of pathophysiology and causes, symptoms, risk factors and dietary management of different disease conditions and disorders

<ul style="list-style-type: none"> ☐ Students will have a thorough understanding the responsible of an dietician with respect to different disease ☐ The students will be able know nutrition support systems during emergency. ☐ Students able to understand principles of diet therapy, modification of normal diet for therapeutic purposes ☐ Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions
Subject and code: PS 815.2 RESEARCH METHODOLOGY AND ETHICS
Course Outcomes:
<p>Course learning outcome:</p> <ul style="list-style-type: none"> ☐ Demonstrate knowledge of research processes (reading, evaluating, and developing) ☐ Perform literature reviews using print and online databases ☐ Define and develop a possible hied research interest area using specific research designs ☐ Compare and contrast quantitative and qualitative research paradigms, and explain the use of each in research ☐ Describe sampling methods, measurement scales and instruments, and appropriate uses of each ☐ Explain the rationale for research ethics, and the impotence of IPR
Subject and code: PS 816.2 Nutrition through Life Cycle
Course Outcomes:
<p>Course learning outcome:</p> <ul style="list-style-type: none"> ☐ Determine nutrient requirements/needs of individuals at different stages of life ☐ Discuss the major nutrition related concerns at each stage of life. ☐ Understand the nutritional needs during pregnancy and lactation, physiological changes and hormones involved during pregnancy and lactation ☐ Understand the effects of ageing and life expectancy
Subject and code: PS 817.2 Nutrition and Physical Fitness
Course Outcomes:
<p>To know the basics of health, nutrition and wellbeing</p> <ul style="list-style-type: none"> ☐ To understand the concepts of diet and physical fitness ☐ To Emphasize the importance of proper fueling for physical activity, pre and post-workout ☐ To learn the special dietary modifications of sports nutrition
Subject and code:PO 818.2 Basic Nutrition
Course Outcomes:
<p>Course learning outcome:</p> <ul style="list-style-type: none"> ☐ Understand the functions and sources of nutrients, role of nutrients in maintenance of good health ☐ Understand the role of macro and micro nutrients in the growth and development ☐ Obtain the knowledge on role and importance of nutrition in weight management ☐ Gain knowledge about food pyramid, food guide, menu planning and balanced diet
Semester-III
Subject and code: PH 811.3 Food Microbiology
Course Outcomes:

Course learning outcome:	
☐	learn the fundamentals of food microbiology.
☐	Identify the novel methods for detection of immunological components.
☐	Acquire the knowledge on various criteria for microbiological assessments in various food products.
Subject and code: PH 812.3 Nutraceuticals and Functional Foods in Human Health	
Course Outcomes:	
Course learning outcome:	
☐	Acquire knowledge on various bio molecules showing health benefits.
☐	Understand various physiological and biochemical aspects of life threatening and chronic diseases.
☐	Apply their knowledge regarding extraction, isolation, characterization and application of nutraceuticals in food industries.
☐	Identify various aspects about safety, quality and toxicology of food products including, nutraceutical and functional foods.
Subject and code: PO 815.3	Health and Fitness
Course Outcomes:	
Course learning outcome:	
☐	To know the role and importance of nutrition management in exercise and sport performance
☐	To emphasize the importance of proper fueling for physical activity, pre and post-workout
☐	To understand the concepts of diet and physical fitness
Semester-IV	
Subject and code: PH 811.4	Nutritional Biochemistry
Course Outcomes:	
Course learning outcome:	
☐	To describe the concepts and chemistry of major nutrients
☐	To explain the macronutrient metabolism and its bioenergetics
☐	To describe protein synthesis and nucleic acid metabolism
☐	To gain basic knowledge on the synthesis and role of hormones
☐	Understand the biological processes and systems as applicable to human nutrition.
Subject and code: PH 812.4	Community Nutrition
Course Outcomes:	
Course learning outcome:	
☐	The students will be able to assess the health status of the community
☐	Students Will know the various organizations related with food and nutrition with its functions
☐	They are able to provide nutrition counselling and education to individuals, groups, and communities throughout the lifespan using a variety of communication strategies
Subject and code: PH813.4	Sports Nutrition
Course Outcomes:	
Course learning outcome:	
☐	Understand the characteristics, physiology and body composition
☐	Obtain knowledge on role and importance of nutrition management in exercise and sport performance

☐	Be familiar with the macro and micronutrient needs of athletes
☐	Understand the role of nutrition in recovery from injury
Subject and code: PS 815.4 Food Safety and Quality Control	
Course Outcomes:	
Course learning outcome:	
☐	Understand, use and apply the knowledge, skills of quality management in food processing.
☐	Understand and critically evaluate the presence of contaminants in food quality assurance.
☐	Understand the chemical, technological and toxicological aspects of food additives in food preservation.
☐	Understand the concept of food safety, types of hazards and their control measures
☐	Comprehend the need of hygiene and sanitation for ensuring food safety
Subject and code: PS 816.4 Assessment of Nutritional Status	
Course Outcomes:	
<ul style="list-style-type: none"> • To learn the direct and indirect methods of assessment • To understand food and nutrition security adding light to its systems • To study nutrition through life span and age specific nutritional requirements 	

Department Name:	P 900 M.Sc. Data Science
PROGRAMME OUTCOMES	
<p>PO1 Statistical computing Ability to understand the basic concepts in Data Science and Statistics, how to explore the datasets using statistical analysis techniques in Python and R.</p> <p>PO2 Applied Mathematical Skills: Ability to understand and implement various algorithms, Mathematical models in view of the real world scenario, which require competence in mathematical skills</p> <p>PO3 Big Data and Data management: Ability to Execute queries, implement views and joins, use MongoDB for various operations on unstructured data. Ability to Optimize business decisions and create competitive advantage with Big Data analytics and understand architectural concepts of Hadoop and map reduce paradigm</p> <p>PO4 Use of various software and Tools: This enables the students to develop strong programming skills required to handle complex data and build algorithms that will provide efficient solutions to the problem at hand; also hands on experience on various Data Analytics Tools</p> <p>PO5 Machine learning and Deep Learning: Understand a wide variety of learning algorithms, how to evaluate models generated from data and apply the algorithms to a real problem, optimize the models learned and report on the expected accuracy that can be achieved by applying the models.</p> <p>PO6 Enabling technologies for Domains A set of Technologies being used in Data Analytics and various models such as Financial Modeling, Marketing Analytics, Social Media Analytics etc.</p> <p>PO8 Advanced Statistical Analysis: Mastering of a suite of methods and workflow styles that will enable the student to produce several new statistical analysis correctly and efficiently present the results from those analyses.</p> <p>PO9 Societal development:</p>	

Identify the information security models and their characteristics, by analysing the different types of cryptographic and forensic methods. Identify and solve different cyber security threats that hamper the society.

PO10 Application of Skills and Capstone Projects

Provide the knowledge and necessary skills to accomplish various analytics with respect to areas like health, HR Analytics, Retail Analytics, Health, Sports & Fitness, Finance etc ... These application areas being used effectively for the Capstone Project.

PROGRAMME SPECIFIC OUTCOMES

PO1 Computational Knowledge:

Apply knowledge of mathematics, computing fundamentals, data analytics, software engineering concepts and application development knowledge appropriate for the computing specialization

PO2 Problem Analysis:

Identify, formulate, design and develop applications to analyze and solve computer science related problems

PO3 Design /Development of Solutions:

Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 Conduct investigations of complex Computing problems:

Use appropriate review literatures, research methodologies, techniques and tools, design, conduct experiments, analyze and make inferences from the resulting data.

PO5 Modern Tool Usage:

Create, Select, Integrate and apply efficiently appropriate techniques, resources, and modern computing tools to solve complex problem, with an understanding of the limitations.

PO6 Professional Ethics:

Understand and work with a professional context pertaining to ethics with appropriate societal and cyber regulations in a global economic environment

PO7 Life-long Learning:

Recognize and develop the passion for a continued career development and progress as a computer professional

PO8 Project management and finance:

Apply the principles of management with computing knowledge to manage the projects effectively both as a team leader and team member on multidisciplinary environments

PO9 Communication Efficacy:

Communicate effectively with the computing community as well as society by being able to make effective presentations and design documentation with respect to appropriate standards.

PO10 Societal and Environmental Concern:

Ability to utilize the computing knowledge efficiently in projects to analyze the global and local impact of business solutions for societal, environmental, and cultural aspects

PO11 Individual and Team Work:

Develop the ability to act as a member or leader for the fulfillment of diverse teams in multidisciplinary environments.

PO12 Innovation and Entrepreneurship:

Develop and design innovative methodologies to create value as a successful entrepreneur and wealth for betterment of individual and society at large.

Subject and code: PH 901.1 : STATISTICS FOR DATA SCIENCE

Course Outcomes:

Learning Outcomes: On successful completion of the course students will be able:

CO1 : To demonstrate proficiency with statistical analysis of data.

CO2 : To develop the ability to build and assess data-based models.

CO3 : To execute statistical analyses with professional statistical software.

CO4 : To apply data science concepts and methods to solve problems in real-world contexts

CO5 : To create and communicate these solutions effectively

Subject and code: PH 902.1 : BIG DATA AND DATA MANAGEMNT

Course Outcomes:

Learning Outcomes: On successful completion of the course students will be able:

CO1: Understand MapReduce as a computation model and an execution framework

CO2: Work with following tools in the big data application stack: Hadoop, YARN, Hive, Pig, Spark, and perhaps others...

CO3: Realize how different tools in the Hadoop stack fit in the big picture of big data analytics

CO4: Design distributed machine learning algorithms

CO5: Use cloud computing services (Amazon Web Services) to build your clusters and run large-scale data processing applications

Subject and code: PH 903.1 : MATHEMATICS FOR DATA SCIENCE

Course Outcomes:

Learning Outcomes: Upon successful completion of this course, a student will be able to:

CO1 : Students will formulate complete, concise, and correct mathematical proofs.

CO2 : Students will frame problems using multiple mathematical and statistical representations of relevant structures and relationships and solve using standard techniques.

CO3 : Students will create quantitative models to solve real world problems in appropriate contexts.

CO4 : Students will effectively use professional level technology tools to support the study of mathematics and statistics.

CO5 : Students will clearly communicate quantitative ideas both orally and in writing

to a range of audiences.

Subject and code: PH 904.1 : ALGORITHMS FOR ADVANCED DATA ANALYTICS

Course Outcomes:
Learning Outcomes: On successful completion of the course students will: CO1 : Analyze the asymptotic performance of algorithms. CO2 : Write rigorous correctness proofs for algorithms. CO3 : Demonstrate a familiarity with major algorithms and data structures. CO4 : Apply important algorithmic design paradigms and methods of analysis. CO5 : Synthesize efficient algorithms in common engineering design situations.
Subject and code: PH 905.1 P DATA SCIENCE and STATISTICAL ANALYSIS LAB
Course Outcomes:
Learning Outcomes: This course provides majors with the skills needed to utilize statistical techniques for addressing quantitative, data-based problems in fields such as biological and social sciences, engineering and technology, business and finance, law, and health and education. Students graduating with a Statistics degree will learn the basics of CO1 : Statistical reasoning and inferential methods CO2 : Statistical modeling and its limitations CO3 : Interpreting and communicating the results of a statistical analysis CO4 : Data analysis using statistical computing tools and software CO5: Probability and the mathematical foundations of statistics
Subject and code: PS 906.1 : DATA WAREHOUSE AND DATA MINING
Course Outcomes:
Learning Outcomes: By the end of the module, the student should CO1 : Display a comprehensive understanding of different data mining tasks and the algorithms most appropriate for addressing them. CO2 : Evaluate models/algorithms with respect to their accuracy. CO3 : Perform a self directed piece of practical work that requires the application of data mining techniques. CO4: Develop hypotheses based on the analysis of the results obtained and test them. CO5: Conceptualize a data mining solution to a practical problem.
Subject and code: PS 907.1 P ADVANCED ALGORITHMS AND DATA MINING USING R LAB
Course Outcomes:
Learning Outcome: Upon completion of the subject, students will be able to CO1 : Examine the concepts of data warehousing and OLAP; CO2 : Apply the concepts of BI and DM techniques for clustering, association, and classification; CO3 : Understand the operation procedures of BI projects in an organization; CO4 : Select appropriate DM tools and methods to manipulate and achieve data; CO5 : Apply DM concepts for formulating business strategies and programs to enhance business intelligence.
Semester-II
Subject and code: PH 901.2 : MULTIVARIATE TECHNIQUES FOR DATA SCIENCE
Course Outcomes:
Learning Outcome: On successful completion of the course the student CO1 : Will appreciate the range of multivariate techniques available, CO2 : Will be able to summarize and interpret multivariate data, CO3 : Will have an understanding of the link between multivariate techniques and corresponding univariate techniques,

CO4 : Will be able to use multivariate techniques appropriately at application level
CO5 : Undertake multivariate hypothesis tests, and draw appropriate conclusion

Subject and code: PH 902.2 : MACHINE LEARNING ALGORITHMS

Course Outcomes:

Learning outcomes:

- CO1 : To implement a neural network for an application of your choice using an available tool.
CO2 : To implement probabilistic discriminative and generative algorithms for an application of your choice and analyze the results.
CO3 : To use a tool to implement typical clustering algorithms for different types of applications.
CO4 : To design and implement an HMM for a sequence model type of application
CO5 : To identify applications suitable for different types of machine learning with suitable justification

Subject and code: PH 903.2 P MACHINE LEARNING AND DATA ANALYTICS LAB

Course Outcomes:

Learning Outcome: Upon completion of the subject, students will be able to

- CO1 : Setup and solve typical machine learning problems, by implementation or by using established computer simulation tools.
CO2 : Decide which machine learning methods/algorithms are suitable for which type of learning problems, i.e. know about their most important weaknesses and advantages.
CO3 : Decide how to represent data to facilitate learning.
CO4 : Recognise typical effects of bad initialisation and parameter selection and suggest ways to improve the results.
CO5 : Describe how, and why, machine learning and natural computation methods work,

Subject and code: PS 904.2: PROBABILITY AND STOCHASTIC PROCESS MODELS

Course Outcomes:

Learning outcomes:

- CO1 : Introduction to the basic concepts of probability and their importance. And Understanding the statistical applications..
CO2 : Understand the principles of probability and the concept of probability distributions,
CO3 : To be familiar with Binomial, Poisson, Geometric, Normal and Exponential probability distributions and their applications.
CO4 : To be familiar with the random variables and their use.
CO5 : Understand the concept of Markov chains and study the transition diagram.

Subject and code: PS 905.2: PREDICTIVE MODELING AND FINANCIAL ANALYTIC

Course Outcomes:

Learning Objectives: Students who complete this course will be able to

- CO1 : Have a high- level understanding of the benefits and objectives of marketing analytics.
CO2 : Apply metrics -driven techniques to improve marketing decisions.
CO3 : Understand best practices through case studies.
CO4 : Learn by doing through hands-on computer spreadsheet models and metric
CO5 : Design and analyze appropriate predictive models.& apply statistical tools for analysis

Subject and code: PS 904.2 : DATA SCIENCE AND HEALTH ANALYTICS
Course Outcomes:
CO1 : Discuss the policy process for improving the health status of populations CO2 : Apply "systems thinking" for resolving organizational problems CO3 : Apply quality and performance improvement concepts to address organizational performance issues CO4 : Describe how the public health information infrastructure is used to collect, process, maintain, and disseminate data CO5 : Use information technology to access, evaluate, and interpret public health data
Subject and code: PS 905.2 : MARKETING ANALYTICS AND OPERATIONS RESEARCH
Course Outcomes:
CO1 : Have a high- level understanding of the benefits and objectives of marketing analytics. CO2 : Apply metrics -driven techniques to improve marketing decisions. CO3 : Understand best practices through case studies. CO4 : Learn by doing through hands-on computer spreadsheet models and metric CO5 : Design and analyze appropriate predictive models.& apply statistical tools for analysis
Subject and code:PS 904.2 : PYTHON FOR DATA SCIENCE
Course Outcomes:
CO1 : Be familiar with the entire procedure of conducting a data analysis project CO2 : Perform exploratory data analysis using Python's Scipy/Numpy libraries , visualization tools CO3 : Prepare data for complex statistical analysis by working with SQL databases, complex joins/merging using Python's Pandas library CO4 : Build statistical inference models with regression, bayesian methods, clustering techniques CO5 : Data visualization and presentations with Python's matplotlib, Bokeh, Plotly libraries
Subject and code: PS 905.2: NoSQL, MapReduce with Hadoop
Course Outcomes:
CO1 : Identify Big Data and its Business Implications. CO2 : List the components of Hadoop and Hadoop Eco-System CO3 : Access and Process Data on Distributed File System CO4 : Manage Job Execution in Hadoop Environment CO5 : Develop Big Data Solutions using Hadoop Eco System
Subject and code:
PS 906.2 P DATA SCIENCE / APPLICATION / BIG DATA TECHNOLOGY LAB
Course Outcomes:
CO1 : Examine the concepts of data warehousing and OLAP; CO2 : Apply the concepts of BI and DM techniques for clustering, association, and classification; CO3 : Understand the operation procedures of BI projects in an organization; CO4 : Select appropriate DM tools and methods to manipulate and achieve data; CO5 : Apply DM concepts for formulating business strategies and programs to enhance business intelligence.
Subject and code: PO 907.2: STATISTICAL DATA ANALYSIS USING R

Course Outcomes:
CO1 : Be able to use and program in the programming language R CO2 : Be able to use R to solve statistical problems CO3 : Be able to implement and describe Monte Carlo the technology CO4 : Be able to minimize and maximize functions using R CO5 : Be competent in Data Visualization using R
Semester-II
Subject and code: PH 901.3 : COMPUTATIONAL INTELLIGENCE AND DEEP LEARNING
Course Outcomes:
CO1 : Gain a working knowledge of knowledge-based systems, neural networks, fuzzy systems, and evolutionary computation; CO2 : Apply intelligent systems technologies in a variety of engineering applications; CO3 : Implement typical computational intelligence algorithms in Python CO4 : Present ideas and findings effectively; and e. Think critically and learn independently. CO5 : Application of Fuzzy and Genetic Algorithms in the mainline areas
Subject and code: PH 902.3 : DATA SCIENCE AND INTERNET OF THINGS
Course Outcomes:
CO1 : Demonstrate knowledge, understanding of the security and ethical issues of the Internet of Things CO2 : Conceptually identify vulnerabilities, including recent attacks, involving the Internet of Things CO3 : Conceptually describe countermeasures for Internet of Things devices CO4 : Analyze the societal impact of IoT security events & Develop critical thinking skills CO5 : Compare and contrast the threat environment based on industry and/or device type
Subject and code: PH 903.3 P COMPUTATIONAL INTELLIGENCE AND INTERNET OF THINGS LAB
Course Outcomes:
CO1 : Examine the concepts of data warehousing and OLAP; CO2 : Apply the concepts of BI and DM techniques for clustering, association, and classification; CO3 : Understand the operation procedures of BI projects in an organization; CO4 : Select appropriate DM tools and methods to manipulate and achieve data; CO5 : Apply DM concepts for formulating business strategies and programs to enhance business intelligence.
Subject and code: PS 904.3 : MODELING, SIMULATION AND DATA SCIENCE
Course Outcomes:
CO1 : Problem formulation - System definition - Model translation - Verification,- validation Experimental design - Analysis (Skills) CO2 : Use the simulation software to: - carry out simulation tasks; CO3 : Use graphs to present their results; CO4 : Write scripting languages to generate other reports. CO5 : Apply the Modeling and Simulation
Subject and code: PS 905.3 : TIME SERIES ANALYSIS AND FORECASTING

Course Outcomes:
CO1 : Have deeper knowledge of statistical theory and methods particularly common problems in economical social sciences especially economics. Co2 : Be able to estimate models for time-series data. CO3 : Be able to interpret the results of an implemented statistical analysis CO4 : Be aware of limitations and possible sources of errors in the analysis CO5 : Have ability to present results in oral and written form
Subject and code: PS 904.3 : REAL TIME DATA ALAYTICS WITH STREAMING DATA
Course Outcomes:
CO1 : Describe and use a wide variety of streaming analytics methods in a business or an industry. CO2 : Understand how analytics can be used in business development CO3 : Learn to use and to apply a selection of modern business analytics tools and software to solving real-world problems with real-world data CO4 : Demonstrate hands-on skills in applying business analytics to real-world business. CO5 : Application of Real Time Data Analytics and Streaming data into real world areas.
Subject and code: PS 905.3 : SOCIAL MEDIA AND NETWORK ANALYTICS
Course Outcomes:
CO1 : Apply multiple quantitative and qualitative methods CO2 : Understand sources and limitations of web-based data CO3 : Perform social network analysis to identify important social actors, subgroups and network properties in social media sites such as Twitter, Facebook, and YouTube CO4 : Use appropriate information visualization technique to gain insights into large datasets CO5 : Apply best practices in Search Engine Optimization
Subject and code:PS 904.3 : BIG DATA ANALYTICS WITH SCALA AND SPARK
Course Outcomes:
CO1 : Understand what Big Data is and why classical data analysis techniques are no longer adequate CO2 : Understand the benefits that Big Data can offer to businesses and organisations CO3 : Understand conceptually how Big Data is stored, retrieved and used CO4 : Understand how Big Data can be analysed to extract knowledge CO5 : Communicate with data scientists and apply the methods in real scenarios
Subject and code: PS 905.3 : DATA VISUALIZATION USING TABLEAU
Course Outcomes:
CO1 : Key concepts in data science, including tools, approaches and application scenarios CO2 : Topics in information design, interaction design and user engagement CO3 : Understand and apply the fundamental concepts and techniques in data visualization CO4 : Solve specific real-world problems related to the visualisation and interpretation of data analysis results CO5 : Use of Data Visualization in Business, Retail, Health, Sports Analtics
Subject and code: PS 906.3 P DATA SCIENCE / APPLICATION / BIG DATA TECHNOLOGY LAB
Course Outcomes:
CO1 : Demonstrate the knowledge of big data, data science, data analytics, distributed

file systems, parallel MapReduce paradigm, NoSQL, machine learning, etc.
 CO2 : Program and implement examples of big data and NoSQL applications using open source Hadoop, HDFS, Spark, Scala, Tableau etc.
 CO3 : Read current research papers and implement example research group project in big data.
 CO4 : Use of Real time Data Sets in Analysis and use of Tools
 CO5 : Application of Ontology and Web Analytics in real scenario

Subject and code: PO 907.3 : DATA SCIENCE AND SYSTEMS THINKING

Course Outcomes:

CO1 : Describe accurately the set of key systems concepts of Systems and Big data
 CO2 : Understand what is distinctive about systems thinking as opposed to other forms of thinking
 CO3 : Understand how systems thinking is useful in analysing and improving situations
 CO4 : Understand the use of Big Data in Systems Thinking i.e in various applications
 CO5 : Use of Data Science effectively to integrate and produce a larger system with creativity

Subject and code: SEMINAR AND TECHNICAL COMMUNICATION

Course Outcomes:

Course Outcomes:
 ? Gather, organize, summarize and interpret literature with the purpose of formulating a proposal.
 ? Write a technical report summarizing state-of-the-art on an identified topic.
 ? Present the study using graphics and multimedia techniques.
 ? Define intended future work based on the technical review.

Semester-IV

Subject and code: INDUSTRY INTERNSHIP / PROJECT WORK / DISSERTATION

Course Outcomes:

Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work.

- Deeper knowledge of methods in the major subject/field of study.
- A capability to contribute to research and development work.
- The capability to use a holistic view to critically, independently and creatively identify, formulate and deal with complex issues.
- The capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate this work.
- The capability to create, analyse and critically evaluate different technical/architectural solutions.
- The capability to critically and systematically integrate knowledge.
- The capability to clearly present and discuss the conclusions as well as the knowledge and arguments that form the basis for these findings in written and spoken English.
- The capability to identify the issues that must be addressed within the framework of the specific thesis in order to take into consideration all relevant dimensions of sustainable development.
- A consciousness of the ethical aspects of research and development work.

Department Name:	G 100A Economics
PROGRAMME OUTCOMES	
<p>PO 1: Enable to apply quantitative techniques suitable for the discipline.</p> <p>PO 2: Analyze the policies of the government in solving economic problems.</p> <p>PO 3: Develop skills required to blend the subject learned and the real-life situations.</p> <p>PO 4: Able to evaluate the working of the economy, its interconnection with the social, political, cultural, environmental, ethical issues in a comprehensive manner.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1: Enable the students with the knowledge of Economics both theoretical and applied.</p> <p>PSO 2: Develop a comprehensive understanding of the various aspects of the branches of Economics related to micro and macro aspects.</p> <p>PSO 3: Understand the working of the domestic and foreign economy.</p> <p>PSO 4: Enable the students to apply the theoretical knowledge of Economics in applying to the real-life situations.</p> <p>PSO 5: Analyse the issues related to various problems like unemployment, balance of payments, poverty, inequality, inflation facing the economy.</p> <p>PSO 6: Develop skills to integrate and organise the inter linkages between and among the varied divisions of the economy.</p> <p>PSO 7: Have a critical assessment of the working of the economy, the interconnections between the various sectors and the policies linked to the development.</p>	
Semester- I	
Subject and code: BASIC ECONOMICS – I (G 102 DC1.1)	
Course Outcomes:	
<p>CO 1: Identify the facets of an economic problem.</p> <p>CO 2: Learn basic economic concepts and terms.</p> <p>CO 3: Explain the operation of a market system.</p> <p>CO 4: Analyze the production and cost relationship of a business firm.</p> <p>CO 5: Evaluate the market decisions under different structure.</p> <p>CO 6: Use basic cost benefit calculations as a means of decision making.</p>	
Subject and code: CONTEMPORARY INDIAN ECONOMY (G 102 DC2.1)	
Course Outcomes:	
<p>CO 1: Students will be informative about the nature of Indian Economy.</p> <p>CO 2: Students will be able to understand the current problems of Indian economy.</p> <p>CO 3: Students will be able evaluate the impact of LPG policies on economic growth in India.</p> <p>CO 4: Students will be able to review various the sector specific policies adopted for achieving the aspirational goals.</p>	
Subject and code: Development Studies (G 102 OE1.1)	
Course Outcomes:	
<p>CO 1: Students will develop a critical understanding of the contemporary issues in Indian economic development.</p>	

CO 2: Students will thus be better prepared to face the professional world and can use this knowledge base in a variety of jobs, including in the corporate.
Subject and code: Business Economics (G 102 OE2.1)
Course Outcomes:
CO 1: Acquired the concepts, tools and techniques of economics in analyzing and interpreting the business decisions.
CO 2: Developed the insight of the functioning of the economy
Subject and code : Pre-reforms Indian economy (G 102 OE2.1)
Course Outcomes:
CO 1: Trace the evolution of Indian economy.
CO 2: Students will be able to understand structural features of Pre reform Indian economy
CO 3: Students will be able evaluate the planning model and policies on economic growth in India.
CO 4: Students will be able to analyse various sector specific policies adopted for achieving the aspirational goals.
Semester- II
Subject and code: Basic Economics -II (G 102 DC1.2)
Course Outcomes:
CO 1: Understand about the operation of the overall economic system.
CO 2: Calculate national income and related aggregates.
CO 3: Explain the relationship between macroeconomic aggregates
CO 4: Analyse the nature of business cycles and policies to control them.
CO 5: Evaluate the macroeconomic policies for solving major problems like poverty and unemployment.
Subject and code : Karnataka economy (G 102 DC2.2)
Course Outcomes:
CO 1: Understand the nature, growth and problems of economy of Karnataka.
CO 2: Explain the process of growth of Karnataka Economy.
CO 3: Evaluate the policies and programmes undertaken by the Govt. of Karnataka for bringing about socio economic development.
Subject and code: Economics of Business Environment(G 102 OE1.2)
Course Outcomes:
CO 1: Explain the elements of Business environment.
CO 2: Identify the environmental constraints in the growth of a business firm.
CO 3: Analyze the ways to utilise the current environmental conditions to achieve higher business growth.
Subject and code: Managerial Economics (G 102 OE1.2)
Course Outcomes:
CO 1: To know the basic knowledge of managerial economics.
CO 2: To understand the dynamics of business.
CO 3: To know about the managerial concept of business
CO 4: Helps the consumers and producers to take apt decisions
Subject and code: Contemporary Indian Economy (G 102 OE1.2)
Course Outcomes:
CO 1: Students will be informative about the nature of Indian Economy.

CO 2: Students will be able to understand the current problems of Indian economy.
CO 3: Students will be able evaluate the impact of LPG policies on economic growth in India.

Subject and code: Monetary Economics (G 102 OE1.2)

Course Outcomes:

CO 1: Understand the current monetary policy and problems
CO 2: Identify and analyse monetary instruments
CO 3: Review the various trends and functions of monetary and financial institutions

Subject and code: Sustainable Development (G 102 OE1.2)

Course Outcomes:

CO 1: Understand the interconnection within the ecosystem of all living beings.
CO 2: Identify the importance of sustainability.
CO 3: Identify factors to find solutions to environment problems that are relevant to protect the welfare of the people.

Semester- III

Subject and code: Micro Economics (G 102 DC1.3)

Course Outcomes:

CO 1: Identify the facets of an economic problem.
CO 2: Learn basic economic concepts and terms.
CO 3: Explain the operation of a market system.
CO 4: Analyse the production and cost relationship of a business firm.
CO 5: Evaluate the market decisions under different structure.
CO 6: Use basic cost benefit calculations as a means of decision making.

Subject and code: Statistics for Economics (G 102 DC2.3)

Course Outcomes:

CO 1: Calculate basic descriptive and inferential statistics.
CO 2: Interpret descriptive and inferential statistics.
CO 3: Explain the process of hypothesis testing.

Subject and code: Economics of Insurance (G 102 OE1)

Course Outcomes:

CO 1: Understand various types of Insurance
CO 2: Understand various risks and Benefits of Insurance

Subject and code: Money and Public Finance (G 102 OE2.3)

Course Outcomes:

CO 1: Understand the meaning of public finance or government finance; its nature, subject matter, explain the differences between public finance and private finance and differentiate between the public and private goods
CO 2: Classify the public revenue and its various sources; revenue receipts and non-revenue receipts, understand the tax and no-tax revenues, the causes of increasing public expenditure in the modern Economies
CO 3: Explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy
CO 4: Understand the various sources of government borrowing and the reasons behind the growing public debt, describe how the debt is repaid, the role of public debt in

developing countries.

Semester- IV

Subject and code: Macro Economics (G 102 DC1.4)

Course Outcomes:

CO 1: On successful completion of the course the student is expected to get
CO2: a thorough understanding of the various theories behind pricing of products and factors in different market environment.
CO 3: Ability to identify and evaluate the main models of market structures and to appreciate the theories behind policy prescriptions.
CO 4: This course in Macroeconomics is expected to develop skill in economic reasoning. By the time, students complete this course, they would know the relevance of government decisions like Wage policy, monetary policy, the RBI policy, etc. in the day-to-day life.

Subject and code: Mathematics for economics (G 102 dc 2.4)

Course Outcomes:

CO 1: Perform basic operations in Vectors and Matrix algebra.
CO 2: Calculate limits, derivatives and integrals of functions of multiple variables.
CO 3 : Calculate Optima for constrained and unconstrained optimization problems encountered in Economics.

Subject and code: Entrepreneurial economics (G 102 OE 1.4)

Course Outcomes:

CO 1: Understand various concepts of entrepreneurship
CO 2: Absorb Skills of entrepreneurship
CO 3: Understand various sources of financing project

Subject and code: International economics (G 102 OE 1.4)

Course Outcomes:

CO 1: Able to identify and analyse different theoretical models of international economics in light of real-world situations.
CO 2: Understand major issues in international finance
CO 3: Able to deal with the problems of international finance analytically
CO 4: Explain the different concepts of terms of trade , the structure of BOP, disequilibrium in BOP, causes of disequilibrium , describe the foreign exchange rate and Determine its equilibrium exchange rate and explain the objectives of IMF and IBRD.

Semester- V

Subject and code: Public Economics - G 102 DC1.5

Course Outcomes:

CO1. Understand introductory Public Finance concepts.
CO2. Study the causes of market failure and corrective actions
CO3. Understand the impact, incidence and shifting of tax
CO4. Study the Economic Effects of tax on production, distribution and other effects
CO5. Enable the students to know the Principles and Effects of Public Expenditure
CO6. Understand the Economic and functional classification of the budget; Balanced and Unbalanced budget
CO7. Understand the Burden of Public debt and know the Classical/ Ricardian views, Keynesian and post-Keynesian views

CO8. To acquaint with the advantages and disadvantages of Deficit Financing,

Subject and code Development Economics - G 102 DC2.5

Course Outcomes:

- CO1. Understand the basic concepts and measurements of Development.
- CO2. Learn some classical and partial theories of Development economics and identify the difference.
- CO3. Identify the difference between Developed and Developing Countries.
- CO4. Analyse and tackle the Development issues effectively.

Subject and code: Economics of Human Resource Management –
G 102 DC3.5

Course Outcomes:

- CO1. Understand the meaning, nature, scope and value of the contemporary approach to human resource management with reference to Economics.
- CO2. To describe an organisation of a human resource management functionary in an establishment, and to identify attributes of a successful personnel manager.
- CO3. To impart knowledge and techniques in human resource planning, Job-Analysis, and Job- Design.
- CO4. To explain various methods of recruitment, selection, induction and placement.
- CO5. To develop the importance and methods adopted for training and development of employees in two days environment in the workplace. .

Subject and code: Indian Banking and Finance - G 102 DC4.5

Course Outcomes:

- CO1. Understand the structure of Indian banking and the role of banks in monetary policy.
- CO2. Analyze the functioning of banks and different types of accounts and other services offered by banks.
- CO3. Evaluate recent developments in the Indian banking sector, including digital banking, payment banks, and non-performing assets.
- CO4. Describe the overview of the Indian financial system, including financial markets, financial instruments, and financial regulation.
- CO5. Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy.
- CO6. Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.

Semester- VI

Subject and code: International Economics - G 102 DC1.6

Course Outcomes:

- CO1. Understand the international trade theories and their application in international trade
- CO2. Explain the concept of terms of trade and demonstrate the effect of trade

barriers; and display the ability to analyse the stages of economic integration
CO3. Understand the concept of BoP and assess the BoP position and examine the changes in forex rate
CO4. Analyse the role of International trade and financial institutions
CO5. Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues

Subject and code: Indian Public Finance - G 102 DC2.6

Course Outcomes:

CO1. Understand the structure of Indian Public Finance
CO2. Enable the students to know the Source and nature of public revenue and expenditure
CO3. Understand the Budget and different concept of deficits
CO4. Know the Public debt and its management
CO5. Understand the fiscal and monetary policy and their tools and importance
CO6. To enable the students to know the Indian federal financing system and Financial Commissions.

Subject and code: Economic Thoughts of Dr.B.R Ambedkar –
G 102 DC3.6

Course Outcomes:

CO1. derive inspiration from the life and works of B R Ambedkar
CO2. Appreciate the socio-economic scenario during Ambedkar' period and compare it with presentday
CO3. Comprehend the contributions of Ambedkar on various economic aspects
CO4. Assess the economic views of Ambedkar in the light of present-day socio-economic problems
CO5. Develop the traits of critical thinking and critiquing

Subject and code: Environmental Economics - G 102 DC4.6

Course Outcomes:

CO1. Understand how economic methods can be applied to environmental issues facing society
CO2. Examine the linkages between Environmental Degradation and Economic Development
CO3. Develop an informed view regarding the potential of economics to help societies achieve their environmental goals
CO4. Demonstrate good inter-personal and communication skills through writing an essay and contributing to critical discussion

CO5. Analyze environmental problems and to assess environmental policies

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:

**G100 A
HISTORY**

PROGRAMME OUTCOMES

- PO1. Learn a basic narrative of historical events in a specific region of the world in a specific time frame.
- PO2. Articulate factual and contextual knowledge of specific places and times to make careful comparisons (Across time space and culture)
- PO3. Have the ability to use bibliographical tools for the advanced study of history.
- PO4. Understand and evaluate different historical ideas various arguments and point of view.
- PO5. Develop an appreciation of themselves and of other through the study of the past in local, regional, national and global context.
- PO6. Have an appreciation of the uniqueness of visual evidence and cultivate a particular skill of using visual evidence to understand human activity of the recent and distant past.

PROGRAMME SPECIFIC OUTCOMES

- PSO 1:History as a subject is considered to be the memory of mankind. In the Department of History, papers such as Indian History, History of Modern Europe, History of Modern Asia and History of Karnataka are taught. It is a balanced curriculum in the under graduate level keeping with the emphasis of world, regional, national and local histories.
- PSO 2: On the completion of the course a student with this knowledge which is essential for getting into any service/employment be it government or private, will be able to pass the competitive exams,since eligibility tests to enter such service requires the student to know these subjects.
- PSO 3: Apart from this competence, a student who as an individual and a citizen would acquire a fair amount of knowledge of History of different spheres national, regional and so on
- PSO 4: The students would also recognize various countries, extent of various kingdoms and empires and places through the map study
- PSO 5: The study tours will enable the students to recognize the heritage centers/symbols and history as case studies.

Semester- I
Subject and code: Political history of Karnataka (BCE-3 to 10 CE) Part-1 (G101 DC1.1)
Course Outcomes:
CO1: Understand the continuity of political developments and strategies. CO2: Analyse the importance of causes for the rise of regional political dynasties. CO3: Understand contextual necessities which influenced the era of political supremacy. CO4: Understand and describe the contemporary political history. Appreciate the confluence of diverse political elements.
Subject and code: CULTURAL HERITAGE OF INDIA (G101 DC2.1)
Course Outcomes:
CO1: Provide an insight about an extensive survey of heritage of India CO2: Familiarize Indian history and culture CO3: Have an expertise to analyse further development of culture of India CO4: Analyse the factor responsible for origin and decline of culture CO5 :Provide the opportunity to understand the process of cultural development
Subject and code : OE - CULTURAL HISTORY OF KARNATAKA (CE 3- CE 10) PART -1(G101 OE1.1)
Course Outcomes:
CO1:Provide an insight about the cultural development of Karnataka. CO2: Familiarize Karnataka history and culture. CO3: Have an expertise to analyze further development of culture of Karnataka. CO4: Analyze the factors responsible for origin and decline of dynasties. CO5: Provide the opportunity to understand the process of cultural diversities.
Semester- II
Subject and code: POLITICAL HISTORY OF KARNATAKA (CE11- 1750 CE) PART-2(G101 DC1.2)
Course Outcomes:
CO1:Understand the rise and fall of Political dynasties in Karnataka. CO2: Familiarize with the patterns of administration. CO3: Analyze the traditional values and ethos of political development. CO4: Understand the rise and fall of regional variations. CO5: Study the complexities involved in polity of the time.
Subject and code: CULTURAL HERITAGE OF KARNATAKA (G101 DC2.2)
Course Outcomes:
CO1: Understand the concept of cultural heritage of Karnataka Study various cultural factors which influence the flow of culture CO2: Familiarize the factors which influenced in influencing culture and society CO3: Analyze the factors responsible for formation of pluralistic society CO4: Understand the concept "Unity in diversity".
Subject and code: OE -CULTURAL HISTORY OF KARNATAKA (11 CE TO 1750 CE) PART – 2 (G101 OE1.2)
Course Outcomes:
CO1: Understand the concept of cultural heritage of Karnataka CO2: Study various cultural factors which influence the flow of culture CO3: Familiarize the factors which influenced in influencing culture and society CO4: Analyze the factors responsible for formation of pluralistic society Understand the concept "Unity in diversity".

Semester- III
Subject and code: POLITICAL HISTORY OF INDIA (From Indus culture to 1206 AD) (G 101 DC1.3)
Course Outcomes:
CO1: Understand the history and culture of Political History of India region. CO2: Analyse the importance of causes for backwardness of this region. CO3: Understand the influence of political influence on the people and culture of this region. CO4: Understand the political, Social, Religious and Cultural history of the region. CO5: Appreciate the divergent cultural and communal harmony of this region.
Subject and code :Regional History - History of the Ancient Tulunadu G101 DC2.3
Course Outcomes:
CO1: Understand the history and culture of Tulunadu. CO2: Analyse the importance of causes for backwardness of this region. CO3: Understand the influence of political influence on the people and culture of this region. CO4: Understand the political, Social, Religious and Cultural history of the region. CO5: Appreciate the divergent cultural and communal harmony of this region.
Subject and code : OE - Freedom Movement in Karnataka (1800-1947) G101 OE 1.3
Course Outcomes:
CO1: Understand the Freedom Movement in Karnataka (1800-1947) CO2: Analyse the importance of causes for backwardness of this region. Understand the influence of Freedom Movement in Karnataka (1800-1947) CO3: Understand the political, Social, Religious and Cultural history of the region. CO4: Appreciate the divergent cultural and communal harmony of this region.
Semester- IV
Subject and code: Political History of India (History of Medieval India AD 1206 -1761) Part-2 - G101 DC1.4
Course Outcomes:
CO1: Understand the Political History Medieval India (from 1206 to 1761). Analyse the importance of causes for backwardness of this region. CO2: Understand the influence of Political History Medieval India (from 1206 to 1761). CO3: Understand the political, Social, Religious and Cultural history of the region. CO4: Appreciate the divergent cultural and communal harmony of this region.
Subject and code: Cultural History of India (From Saraswati - Indus Culture to 1206 CE). - G101 DC2.4

Course Outcomes:
CO1: Understand the History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE). Analyse the importance of causes for backwardness of this region. CO2: Understand the influence of History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE). CO3: Understand the political, Social, Religious and Cultural history of the region. CO4: Appreciate the divergent cultural and communal harmony of this region.
Subject and code: OE- Freedom Movement in India (1885-1947) G101 OE1.4
Course Outcomes:
CO1: Understand the History of Freedom Movement in India (1885-1947). CO2: Analyse the importance of causes for backwardness of this region. CO3: Understand the influence of History of Freedom Movement in India (1885-1947). CO4: Understand the political, Social, Religious and Cultural history of the region. CO5: Appreciate the divergent cultural and communal harmony of this region.
Semester- V
Subject and code: History of Western Civilisation - G101 DC 1.5
Course Outcomes:
CO1: able to understand the domination of the colonial government and its reaction by the Indians. How Indians organized themselves to fight the long colonial domination will be understood by the students. CO2: In the history of the world how non-violent movement of Mahatma Gandhi triumphed is also taught. How by the mid twentieth century, India became independent and emerged as a prominent democratic country of the world is also taught.
Subject and code: - European History G101 DC 2.5
Course Outcomes:
CO1: To understand and analyse the European History. Major events of European History like the French Revolution, Nationalism in Germany and Italy, the First World and the like and their impact on the world.
Subject and code Contemporary History of India from 1947- 1990s – G 101 DC 3.5
Course Outcomes:
CO1: know the meaning of legacy of Colonialism CO2: understand the legacy of Colonialism. CO3: assess the political legacy of Colonialism. identify the important legacies in the form of political legacy of British Colonialism in India.
Semester- VI
Subject and code HISTORY OF FREEDOM MOVEMENT AND UNIFICATION IN

KARNATAKA - G101 DC 1.6	
Course Outcomes:	
CO1: The course will study the freedom movement in the state of Karnataka. They will also study the Unification movement which was simultaneously going on in the Kannada region. Students will understand how regional freedom and unification movements were going on simultaneously leading to regional identity and nationalism in India. This is a case study of one of the states in the southern part of India.	
Subject and code: History of India. (CE1761-CE 1857) - G101 DC 2.6	
Course Outcomes:	
CO1: Analyse the concepts such as equality, liberty and fraternity.	
CO2: Understand the emergence of National spirit leading to national unity. Industrial	
CO3: Revolution and its impact on the society all over the world.	
CO4: Understand colonialism and its background and its consequences.	
Subject and code: Process of Urbanization in India - G101 3.6	
Course Outcomes:	
CO1: They should understand that the urban centres due to their production and mercantile activities.	
CO2: They should be able to understand the historical process of urbanization.	
<ul style="list-style-type: none"> • INTERNSHIP: • To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. • To undertake experiential learning to improvise the technical and social skills. • To build curriculum vitae and strengthen the work experiences. 	

Department Name:	G100 B POLITICAL SCIENCE
PROGRAMME OUTCOMES	
PO 1: Demonstrate competency with the basic tools underlying the subject of Political Science (as a discipline of study and research)	
PO 2: Discern key concepts in politics, sharpen the understanding of political discourses and augment the ability to conduct scientific enquiry on political questions	
PO 3: Promote a healthy civic society, contribute to the society as responsible civic conscious members of the society and to be gender sensitive	

PO4: Analyse political and policy issues and build capacities to articulate policy options
 PO5: Demonstrate critical thinking, including the ability to form an argument about key concerns of political theory and issues of public policy and politics
 PO6: Understand the relations between nations of the world
 PO7: Promote participation in the global world for better living.
 PO8: Demonstrate the need for global leadership

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Discuss the major theories and concepts of political science and its subfields
 PSO 2: Distinguish systematic normative inquiry from Behavioural kinds of inquiry within the discipline of political science
 PSO 3: Demonstrate the ability to apply abstract theory to concrete problems by using the ideas of political theorists to address contemporary political issues
 PSO 4: Assess the origin and evolution of conceptual framework of political theory and Political Institutions
 PSO 5: Demonstrate the inter-connection between Liberty, Equality, Justice and Democratic ethos
 PSO 6: Discuss the major theories and concepts of political science and its subfields
 PSO 7: Distinguish systematic normative inquiry from Behavioural kinds of inquiry within the discipline of political science
 PSO 8: Demonstrate the ability to apply abstract theory to concrete problems by using the ideas of political theorists to address contemporary political issues

Semester- I

Subject and code: Basic Concepts in Political Science G 103 DC1.1

Course Outcomes:

CO1. To introduce students to the concepts, categories, theories, and constructs of Political Science
 CO2. To inculcate among students the values and essentials of responsible and active citizenship.
 CO3. To enable students to comprehend the values and principles underlying political order and to reflect constructively on the issues of governance.
 CO4. To enable students to understand the interface between politics and society, and the complexities in political choices.

Subject and code: Political Theory G 103 DC2.1

Course Outcomes:

CO1. To introduce the students to the concepts and constructs in political theory.
 CO2. To enable students to evolve a comparative perspective on ideas and ideologies.
 CO3. To help students understand the politico-normative issues with conceptual clarity and to apply it in practice.
 CO4. To equip students to handle complex and abstract arguments in political theory.

Subject and code: OE - INDIAN POLITY: ISSUES AND CONCERNS

Course Code: G 103 OE1.1

Course Outcomes:

CO1. To enable students to grasp the complex relationship/ linkages between politics and society.

CO2. To comprehend the dynamics and forces at work in shaping the political process.
CO3. To enable students to recognize the nature and trends in Indian politics.
CO4. To enable students to identify and critically reflect on the major issues confronting Indian politics.

Semester- II

Subject and code: WESTERN POLITICALTHOUGHT

Course Code: G 103 DC1.2

Course Outcomes:

CO1: To familiarise students with western foundations of political thought and critically engage with the rational and/or material universe of the west.
CO2. To identify and evaluate the changes and continuity in western political thought
CO3. To expose students to the divergent perspectives on politics, state and its arrangements within the western political tradition
CO4. To create an understanding among students on western engagements with issues of governance and political order

Subject and code : INDIAN NATIONAL MOVEMENT AND CONSTITUTIONAL DEVELOPMENT

Course Code: G 103 DC2.2

Course Outcomes:

CO1. To endow students with a historical perspective on the rise and growth of nationalism and the making of the Indian Constitution.
CO2. To enable students to comprehend the influence of diverse perspectives and values articulated during the national movement that influenced the making of the Indian political system.
CO3. To enable students to understand the milestones, contestations and settings that shaped the Indian political system.
CO4. To help students to understand the motives and visions of Constitution-makers in the incorporation of novel aspects in the Indian Constitution.

Subject and code : OE - Title: LEGAL LITERACY IN INDIA

Course Code: G 103 OE1.2

Course Outcomes:

CO1: Provide essential knowledge on general principles of law, get acquainted with the nature and sources of law, relation of law with human and institutional agencies responsible to ensure just, equitable and secure environment for the protection of human rights, liberty and balancing the interests of the individuals and society at large.
CO2. Locate criminal justice system, civil procedure code, various family laws, laws relating contract and property

Semester- III

Subject and code: INDIAN GOVERNMENT AND POLITICS

Course Code: G 103 DC1.3

Course Outcomes:

CO1: To provide students an understanding of the functioning of the Indian Government and Politics.
CO2. To make students understand the philosophy of Indian constitution and its commitment towards citizens.

CO3. To provide students necessary knowledge to assess the performance of the Union and state governments.

CO4. To help students to develop interest in politics and grasp the dynamics/nuances of the politics, leadership and the role of socio-economic, religious and lingual issues.

Subject and code: PARLIAMENTARY PROCEDURES IN INDIA

Course Code: G 103 DC2.3

Course Outcomes:

CO1: To provide a basic understanding of the parliamentary system of governments and the constitutional provisions relating to the parliamentary procedures in India.

CO2. To familiarise students with the legislative procedures and practices in India.

CO3. To impart the students adequate skills for participation in deliberative processes and democratic decision making.

CO4. To enable students to understand the working of democracy through an institutional mechanism.

Subject and code: OE - READING GANDHI

Course Code: G 103 OE1.3

Course Outcomes:

CO1. To enable students to understand the core elements of Gandhian thought and Gandhi's approach to the key issues of contemporary India.

CO2. To familiarise students on the Gandhian ideas on wide range of issues including politics, economics, social reconstruction, religion and issues of sustainable development.

CO3. To acquaint the students on the ideas of Gandhi on social relations and issues.

CO4. To assess the relevance of Gandhi on the current political discourses through the analysis of his ideas on modern society, Swadeshi etc

Semester- IV

Subject and code: ANCIENT INDIAN POLITICAL IDEAS AND INSITUTIONS

Course Code: G 103 DC1.4

Course Outcomes:

CO1. To provide students an understanding of the social and political philosophy of ancient India.

CO2. To facilitate assessment of modern notions on socio-political arrangements in the background of the study of Ancient India.

CO3. To enable critical reflection and to de-colonise the mind-set related to India's past.

CO4. To focus and develop indigenous political theories relevant to changing times.

Subject and code: MODERN POLITICAL ANALYSIS

Course Code: G 103 DC2.4

Course Outcomes:

CO1: To equip students to understand the functioning of political institutions with a insights on both normative and empirical ways of understanding.

CO2. To enable students to grasp and evaluate the value laden and value neutral aspects of government functioning.

CO3. To enable students to scientifically assess the functioning of the governments as result oriented institutions.

CO4. To familiarise students with the process of decision making in political institutions.

Subject and code: OE- POLITICAL JOURNALISM

Course Code: G 103 OE1.4
Course Outcomes:
CO1. To equip students to develop insights into political reporting. CO2. To grasp the essentials of writing skills backed by proper use of grammar and economy of words. CO3. To provide a broad overview of the nuances of interpreting the political phenomena from grassroots to the Parliament. CO4. To consider seriously Media as a career option.
Semester- V
Subject and code: INTERNATIONAL RELATIONS - G 103 DC1.5
Course Outcomes:
CO 1 To make students understand the importance of studying International Relations. CO 2 To make students realize the significance of relations with neighbouring states CO 3 To expose the students towards changing dimensions of national power CO 4 To make students understand the employment opportunities in Foreign Affairs
Subject and code: COMPARATIVE GOVERNMENT AND POLITICS G 103 DC2.5
Course Outcomes:
CO1 To introduce students to the fundamentals of the study of comparative government and politics. CO2: To compare and comprehend structural components of the democratic and non-democratic political systems. CO3: To expose students to the functioning of the given political systems. CO4: To equip students to acquire knowledge on the different political systems and compare them to make assessment on the right and wrong political decisions.
Subject and code: KARNATAKA GOVERNMENT AND POLITICS - G 103 DC3.5
Course Outcomes:
CO1 To make students to understand the significance of the study of state politics and to enlarge the understanding of federal relations in India. CO2: To enable students to recognize the major transformations of state politics both in pre and post-independence era. CO3: To make students to understand how the social factors influence the politics at the state level. CO4: To expose students to the fundamental requirements of competitive examinations.
Semester- VI
Subject and code: : INTERNATIONAL RELATIONS – THEORETICAL ASPECTS - G 103 DC1.6
Course Outcomes:
CO 1 To introduce students to the larger theoretical positions of International

<p>relations.</p> <p>CO 2 To enable students to understand the importance of theories in academic debates</p> <p>CO 3 To make students familiarize the major transformations in theoretical positions.</p> <p>CO 4 To enlarge the learning capacity of students and apply the same for preparing for the competitive examination.</p>
<p>Subject and code POLITICAL ECONOMY OF INDIA - G 103 DC2.6</p>
<p>Course Outcomes:</p> <p>CO1 To introduce students to the linkages between politics and economy</p> <p>CO2 To make students understand the importance of the knowledge as to how economies operate within a given political system.</p> <p>CO3: To enable students to understand various agencies shaping and defining the development at large.</p> <p>CO4: To make students to realize the importance of this course in preparing for the competitive examinations.</p>
<p>Subject and code MODERN INDIAN POLITICAL THINKERS - G 103 DC3.6</p>
<p>Course Outcomes:</p> <p>CO1: To make students to understand the major contributions to modern Indian Political Thought.</p> <p>CO2: To enable students to engage with the immediate past and examine its impact today.</p> <p>CO3: To introduce students to different schools of thought that shaped the underlying philosophy of modern India.</p> <p>CO4: To prepare students to face the challenges at the level of cracking of competitive examinations</p>
<p>INTERNSHIP:</p> <ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences.

<p>Department Name: G100 C</p>	<p>ENGLISH MAJOR</p>
<p>PROGRAMME OUTCOMES</p>	
<p>CO1: Students are introduced to various literatures from across the world alongside a survey of canonical British writers</p> <p>CO2: They are introduced to concepts of colonialism, post colonialism, nativism, culturalism and identity</p>	

CO3 :They are introduced to various critical and theoretical approaches to help them develop their critical thinking abilities

PROGRAMME SPECIFIC OUTCOMES

PSO1: Knowledge of British social and cultural history through introduction to canonical texts of British literature

PSO2: Understanding of diverse cultural contexts of different nations, geographies and people through selected texts of renowned authors

PSO3: Understanding of Modernism through introduction to relevant texts of prose, poetry, drama and fiction of the 20th century

PSO4: Knowledge of concepts such as nation, nationalities, race and civilization through introduction to selected texts from the period of Indian nationalist struggle

PSO5: Knowledge of concepts like colony, colonization and Postcolonialism through historical understanding of relevant texts

PSO6: Understanding the concept of literary criticism and literary theory. Knowledge of various theories necessary for interpretation of texts

PSO7: Introduction to concepts and theories of culture, ideologies of culture and critical analysis of cultural aspects represented in literature

PSO8: Understanding concepts of gender, sexuality, hetero-normativity, patriarchy, sexism, gender relations and embodiment.

Semester- I

Subject and code: Introduction to Literature G 108 DC 1.1

COURSE OUTCOMES

CO1:To introduce students to the major works of English literature.

CO2: To understand different periods in the history of English literature.

CO3: To understand works in different genres of literature.

CO4: To introduce students to Literature from various regions of the world.

Subject and code: Indian Writing in English - Part I G 108 DC 2.1

COURSE OUTCOMES

CO1: To give an understanding of social and cultural contexts across the world.

CO2: To bring a global perspective on literature

CO3: To understand the beginnings of Modernism..

CO4: To explore the realms of Literary Modernism in English literature.

Semester- II

**Subject and code: Introduction to Phonetics and Linguistics
G 108 DC 1.2**

COURSE OUTCOMES

CO1:To understand the different movements and literary styles associated with modernism.

CO2: To understand concepts of colonialism, postcolonialism, neo-imperialism

CO3: To analyze the social, political and historical impact of colonization and native responses to it

CO4:To study structures of power underlying colonialism, nativism

CO5: To understand the impact of colonization on language

Subject and code: Indian Writing in English - Part II

G 108 DC 2.2
COURSE OUTCOMES
CO1: To examine literary works, theatre and films from a postcolonial perspective CO2: To trace the changing approaches to literary studies CO3: To give an understanding of the philosophical background of ancient western classical criticism CO4: To chart the transition from literary criticism to theory CO5: To give an overview of modern critical practices
Semester- III
Subject and code : British Literature Upto 1800
G 108 DC 1.3
COURSE OUTCOMES
CO1: To explore concepts of Nationalism/Nation, Colonization, Gender, Caste CO2: To understand the socio-historical background of anti-colonial nationalism CO3: To locate current discourse of cultural nationalism in late Nineteenth century Social Reform Movement CO4: To study autobiographical, literary works, plays, fiction written in response to nationalism, partition and post-colonial nation-state
Subject and code: Indian Writing in Translation
G 108 DC 2.3
COURSE OUTCOMES
CO1: To understand the distinction between symbolic culture and culture as lived practice CO2: To explore cultural identities of race, class, gender and nation in literary texts
Semester- IV
Subject and code: British Literature – 1800 & after
G 108 DC 1.4
COURSE OUTCOMES
CO1: To understand the historical evolution of the meanings of culture CO2: To understand the distinction between symbolic culture and culture as lived practice CO3: To explore cultural identities of race, class, gender and nation in literary texts CO4: To examine cultural signifiers in visual and literary texts
Subject and code: Gender Studies
G 108 DC 2.4
COURSE OUTCOMES
CO1: To understand the concept of gender as a social construct CO2: To examine the ideological underpinnings of masculinity, femininity CO3: To analyse the alternate nature of sexuality CO4: To examine the ways in which gender intersects with different categories such as class, race, nation
Semester- V
Subject and code: Literary Criticism - G 108 DC 1.5
COURSE OUTCOMES

CO1: Students will understand the basic concepts, function, and steps of literary criticism.
CO2: Students will be able to analyze and understand the complexities of literary works.
CO3: Students will be able to write literary criticism based on the concepts and theories they studied.

Subject and code: Translation Studies G 108 DC 2.5

COURSE OUTCOMES

CO1: Students will be able to compare translation theories and methodologies
CO2: Students will be able to select and apply appropriate translation strategies in a professional context.
CO3: Students will be able to apply ethical and professional translation strategies in real life settings.
CO4: Students will be able to evaluate personal language skills.

Subject and code: Subaltern Studies - G 108 DC 3.5

COURSE OUTCOMES

CO1: students should be able to articulate subaltern perspectives with clarity and empathy.
CO2: They will be capable of presenting their analyses both in written and oral forms
CO3: Students will gain a thorough understanding of subaltern theory, including foundational concepts.

Subject and code: Life Narratives G 108 DC 4.5

COURSE OUTCOMES

CO1: Students will gain an understanding of theories and frameworks surrounding life narratives.
CO2: Students will become familiar with different forms of life narratives, including autobiographies, memoirs, diaries, letters, oral histories, digital stories, and graphic novels.
CO3: They will develop an awareness of how personal narratives can challenge, reinforce, or complicate cultural stereotypes and dominant narratives.

Semester- VI

Subject and code: Postcolonial Studies - G 108 DC 1.6

COURSE OUTCOMES

CO1: To understand the historical evolution of the meanings of culture
CO2: To understand the distinction between symbolic culture and culture as lived practice
CO3: To explore cultural identities of race, class, gender and nation in literary texts
CO4: To examine cultural signifiers in visual and literary texts

Subject and code: World Literature in Translation - G 108 DC 2.6

COURSE OUTCOMES:

CO1: Students will gain insight into the role of translation in world literature
CO2: By studying a wide range of literary styles and forms, students will develop an appreciation for the richness and diversity of world literature..
CO3: Students will engage critically with global issues such as colonialism, migration, identity, conflict, and cultural heritage.

Subject and code: Women's Writing - G 108 DC 3.6

COURSE OUTCOMES:

CO1: Students will gain a comprehensive understanding of recurring themes in women's literature, such as identity, gender roles

CO2: Students will examine how historical periods, social movements (such as feminism and civil rights), and cultural backgrounds have influenced the works of women writers.

CO3: They will be able to identify and discuss unique literary techniques and perspectives that women writers bring to their work.

Department Name:

**G 100 D
SOCIOLOGY**

PROGRAMME OUTCOMES

PO 1: The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible.

PO 2: The B.A. graduates will be acquainted with the global social, economical, historical, geographical, political, ideological and philosophical tradition and thinking.

PO 3: The programme empowers and thoroughly prepares the graduates to appear for various competitive examinations or choose the post graduate programmes of their choice.

PO 4: The programme enables the students to acquire knowledge with human values framing the base to deal with various problems in life with courage and humanity.

PO 5: The students will be ignited enough to critically think and act over for solution to various issues prevailing in human life to make this world a better place.

PO 6: The programme provides a holistic base for every student to become a responsible citizen.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Demonstrate knowledge of fundamental theoretical approaches and core disciplinary concepts.

PSO2: Understand sociological phenomena, social structures, social institutions, cultural practices, and multiple axes of difference and/or inequality.

PSO3: Understand the Indian society, both the rural and urban communities, and the institutions therein with their complex functioning.

PSO4: Possess knowledge of the history and evolution of the industrial society and its functioning in current times.

PSO5: Develop an ability to use social scientific research methods to address sociological questions and exhibit critical thinking skills in evaluating sociological research, including the background assumptions, appropriateness of methods used and the strength of explanatory evidence.

PSO6: Possess knowledge and analyse various social problems engulfing India and suggest remedies for the same.

PSO7: Demonstrate the ability to use several of the major classical or contemporary perspectives in social theory and apply the same in contemporary society.

PSO8: Understand the current social welfare programmes in India and their importance for the growth and progress of India keeping the vulnerable groups in mind.

Semester- I

Subject and code: Understanding Sociology
code: G 104 DC1.1

COURSE OUTCOMES

CO1: Understand the discipline of Sociology
CO2: Trace the origin of Sociology
CO3: Analyse the relevance of Sociology in contemporary times
CO4: Describe the fundamental theoretical approaches
CO5: Apply the theories to conceptualize a sociological problem
CO6: Understand the specialized branches of Sociology and various career opportunities
CO7: Analyse the importance of the specialized branches of Sociology in the global context
CO8: Understand the sociological thinking of the founders of Sociology.
CO9: Understand the concept of culture
CO10: Explain the process of socialization
CO11: Apply socialization in the daily social lives
CO12: Comprehend the uniqueness of sociological imagination in the study of society
CO13: Impart critical thinking to interpret the social scenario.

Subject : CHANGING SOCIAL INSTITUTIONS IN INDIA
CODE: G 104 DC2.1

COURSE OUTCOMES

CO1. Understand the nature of inequalities in the society
CO2. Learn the dynamics of social groupings and discrimination
CO3. Understand the ideologies behind social stratification and mobility.
CO4. The modes of social improvement people use
CO5. Assess the reservation policy and its implications.
CO6. Learn the nature of social mobility
CO7. Identify the new forms taken by institutions of family and marriage
CO8. Examine the relationship between religion and science

Subject :Indian Society: Continuity and Change
Code : G 104 OE1.1

COURSE OUTCOMES

CO1. Understand social issues and problems of contemporary India.
CO2. Change agents - governmental and non-governmental organizations.
CO3. Structural linkages and interrelationships of social issues.
CO4. Emerging social issues and problems of contemporary India
CO5. Sociological understanding of issues and problems
CO6. Empower to deal with issues and problems
CO7. Better understanding of their own situation and region.

Semester- II

Subject : Foundations of Sociological Theory

Code: G 104 DC1.2
COURSE OUTCOMES
CO1. Understand the emergence of Sociology. CO2. Know the foundations of Sociology. CO3. Understand the contributions of early sociologists. CO4. Impart critical thinking CO5. Inculcate analytical ability to interpret the social scenario. CO6. Understand the forces in the rise of sociological theory. CO7. Understand the concepts of early sociologists
Subject : Sociology of Rural Life in India
Code : G 104 DC2.2
COURSE OUTCOMES
CO1. Analyze rural problems in India CO2. Knowledge of rural governance. CO3. Skills to reconstruct rural institutions and rural development. CO4. Sociological understanding of society in India CO5. Basic concepts in rural studies CO6. Development programmes to plan, monitor and evaluate. CO7. Understanding of the linkages between urban and rural reality
Subject : Society through Gender
Code: G 104 OE1.2
COURSE OUTCOMES
CO1. Understand gender determination and gender roles. CO2. Analyse gendered nature of major social institutions CO3. Understand the challenges to gender inequality CO4. Theories of gender relation in Indian society. CO5. Gender as a category of social analysis. CO6. Basic concepts of gender and gender inequality CO7. Gendered nature of major social institutions CO8. Social construction of gender and gender roles CO9. Identify gender bias and discrimination in everyday social interaction
Semester- III
Subject : Social Stratification and Mobility
Code : G 104 DC1.3
COURSE OUTCOMES
CO1. Understand the meaning of social stratification CO2. Examine forms of stratification, understand the relevance of caste, class and estate in contemporary world. CO3. Inculcate a truly inter-disciplinary approach in the study of society especially stratification in all its manifestations. CO4. Identify different perspectives on stratification CO5. Analyse social mobility and changing patterns in India
Subject : Sociology of Urban Life in India
Code : G 104 DC2.3
COURSE OUTCOMES
CO1 Understand urban sociology and the changing structure

CO2 Acquaint with various perspectives on urban sociology CO3 Exposure to urban policies and planning
Subject : Sociology of Tourism Management Code : G 104 OE1.3
COURSE OUTCOMES
CO1. Basic knowledge on tourism, culture and tourist CO2. Understand social aspects of tourism CO3. Understanding tourism as a socio-economic force in social development. CO4. Understanding cultural differences and respect for others culture. CO5. Analyze tourism management and its changing trends
Semester- IV
Subject : Sociology of Marginalised Groups Code: G 104 DC1.4
COURSE OUTCOMES
CO1. Focus on the neglected segments of the population CO2. Sociological study on causes of marginalization CO3. Knowledge on communities in extreme poverty, deprivation and discrimination CO4. Enable to locate marginality of major communities which is deeply embedded in Indian social structure CO6. Understand nature of emerging global social exclusion and social change
Subject : Population and Society Code: G 104 DC2.4
COURSE OUTCOMES
CO1: Understand population and society CO2: Acquaint with the global population trends CO3: Knowledge of sources of demographic data CO4: Analyse population as a constraint and development for society and examine the theories, policy and programmes
Subject : Sociology of Leisure Code: G 104 OE1.4
COURSE OUTCOMES
CO1. Knowledge of leisure and its types CO2. Analyse constraints on leisure participation CO3. Familiarize with commodification of leisure
Semester- V
Subject and Code: Social Entrepreneurship - G 104 DC 1.5
COURSE OUTCOMES
CO1. To provide knowledge about social entrepreneurship CO2. To help to develop social entrepreneurship imagination CO3. To help them to start their own social enterprise or not for profit startup as well as act innovative in the already working organization
Subject and Code: Tribal Society - G104 DC 2.5
COURSE OUTCOMES
CO1. To provide basic knowledge about social organization among tribal CO2. Critically understand the implications of changes occurring

C03. Undertake micro research work and communicate effectively
Subject and Code: Statistics in Sociological Research - G104 DC 3.5
COURSE OUTCOMES:
CO1. General introduction to statistical techniques for analyzing social science data CO2. To compute these basic statistics as appropriate for the data at hand CO3. Learn techniques for summarizing data, examining relationships among variables, generalizing from samples to populations, and testing statistical hypotheses
Semester- VI
Subject and Code: Sociological Perspectives - G104 DC 1.6
COURSE OUTCOMES
CO1: To introduce major Sociological theoretical approaches CO2: To introduce and use fundamental categories of theory CO3: Compare and contrast the ways different theorists use the same or similar concepts to build or present their ideas
Subject and Code : Sociology of Health- G104 DC 2.6
COURSE OUTCOMES
CO1: Understand the concept of health, illness and social conditions CO2: Analyze the relationship between social factors and health status CO3: Understand the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health
Subject and Code : Society in Karnataka - G104 DC 3.6
COURSE OUTCOMES :
CO1: Enhance Sociological knowledge about the Local and Regional context of Karnataka CO2: Acquaint students with the changing trends in Karnataka with special reference to Development processes and politics CO3: Learn about the unique cultures in Karnataka
INTERNSHIP:
<ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 100 E JOURNALISM
PROGRAMME OUTCOMES	
PO 1: Develop Graduates with basic understanding on various media and communication practices and its importance in contemporary society	
PO 2: Enhancement of skills in various Media production techniques and to be industry ready	
PO 3: Develop and apply scientific approach to meet the needs of the society and to produce responsible and creative media professionals	
PROGRAMME SPECIFIC OUTCOMES	
PSO 1: Gain knowledge on various communication patterns	
PSO 2: Acquire skills of journalistic practices	
PSO 3: Recognizing Media as a important information and education tool	
PSO 4: Equipped with various media technologies	
PSO 5: Creation of innovative media content	
PSO 6: Ability to enquire and respond to various social issues and concerns through media practices	
PSO 7: Develop skills to analyze media content with a critical bent of mind	
PSO 8: Get hands on experience in media field through internships and media campaigns	
PSO 9: Create socially responsible media practitioners	
Semester- I	
Subject and code: Introduction to Journalism G 105 DC1.1	
Course Outcomes:	
CO1: Understand and appreciate various dimensions of mass communication	
CO2: Develop an understanding of the fundamental concepts of Journalism	
CO3: Analyse the scope and various dimensions in Journalism	
CO4: Discuss the recent trends in Mass Media	
Subject and code: Practical- Journalistic writing skills G 105 DC2.1P	
Course Outcomes:	
CO1: Understand and appreciate various dimensions of mass communication	
CO2: Develop an understanding of the fundamental concepts of Journalism	
CO3: Analyse the scope and various dimensions in Journalism	
CO4: Discuss the recent trends in Mass Media	
Subject and code: WRITING FOR MEDIA G 105 OE1.1	
Course Outcomes:	
CO1: To make them familiar with writing for media and develop interest in writing	
CO2: Introduce the students to cultivating of sources	
CO3: Equip the students with new trends in media writing	
Semester- II	
Subject and code: COMPUTER APPLICATIONS FOR MEDIA	

G 105 DC1.2
Course Outcomes:
CO1: Understand the basic concepts of computers CO2: Develop and understanding of the applications of computers in print and electronic journalism CO3: Apply Information Technology skills in print and Broadcast projects. CO4: Demonstrate web-based broadcasting skills
Subject and code: Practical- BASIC MULTIMEDIA SKILLS G 105 DC2.2P
Course Outcomes:
CO1. Creating Power Point Presentation using Multimedia tools CO2. Designing an e-paper page using QuarkXPress/InDesign CO3. Creating Infographics CO4. Record content of your choice using audio-recording software CO5. Creating Multimedia Content-News stories and Feature stories CO6. Podcast
Subject and code: PHOTO JOURNALISM : G 105 OE1.2
Course Outcomes:
CO1: To attract students toward Photojournalism CO2: To familiarize the students to techniques of photography and photojournalism CO3: To give a practical knowledge in the field of Photography
Semester- III
Subject and code: News Reporting and Analysis G 105 DC1.3
Course Outcomes:
CO1: Organize and articulate new stories understanding the concepts, structure, and types of news. CO2: Evaluate and analyse the importance of sources and types of information that provide the basis for news stories. CO3: Formulate skills for news selection, processing, prioritizing and finally, designing the end-product, CO4: Identify the basic ethical issues confronting editors and can practice fair play.
Subject and code: Practical - -News Reporting and Analysis G 105 DC2.3P
Course Outcomes:
CO1: Organize and articulate new stories understanding the concepts, structure, and types of news. CO2: Evaluate and analyse the importance of sources and types of information that provide the basis for news stories. CO3: Formulate skills for news selection, processing, prioritizing and finally, designing the end-product, CO4: Identify the basic ethical issues confronting editors and can practice fair play.

Subject and code: Feature Writing and Freelancing G 105 OE1.2
Course Outcomes:
CO1: Organize and articulate competent feature stories understanding the concepts, structure, and types of features. CO2: Write different types of feature stories and get published. CO3: The students should turn into serious free lancers understanding ups and downs in the freelancing.
Semester- IV
Subject and code: News Processing and Editing G 105 DC1.4
Course Outcomes:
CO1: Understand the hierarchy of editorial department and the role of editors. CO2: Edit copy precisely and consistently, using correct grammar and eliminating libelous passages and items in poor taste. CO3: Be able to write clear and accurate headlines, decks, and captions. CO4: Be able to design basic news pages. Understand the basic ethical issues confronting editors.
Subject and code: Practical -News Processing and Editing G 105 DC2.4P
Course Outcomes:
CO1: Understand the hierarchy of editorial department and the role of editors. CO2: Edit copy precisely and consistently, using correct grammar and eliminating libelous passages and items in poor taste. CO3: Be able to write clear and accurate headlines, decks, and captions. CO4: Be able to design basic news pages. Understand the basic ethical issues confronting editors.
Subject and code: Translation for Media G 105 OE1.4
Course Outcomes:
CO1: Translate the given stories keeping in mind the requirements of the client. CO2: Understand the difference between translations for different media and practice it. CO3: Gain a mastery over the techniques of translation.
Semester- V
Subject and code: Introduction to Communication - G 105 DC1.5
Course Outcomes:
CO 1: Analyze and interpret communication processes CO2: Gain skills like active listening, feedback, conflict resolution, and self-disclosure CO3 : Communicate effectively in group settings by understanding group dynamics CO 4: Participate in decision-making processes, managing conflicts, and contributing to collaborative problem-solving. CO5: Develop public speaking skills to confidently present ideas and messages to diverse audiences.
Subject and code : Practical- Introduction to Communication - G 105 DC 2.5P
Course Outcomes:
CO 1: Analyze and interpret communication processes CO2: Gain skills like active listening, feedback, conflict resolution, and self-disclosure

CO3 : Communicate effectively in group settings by understanding group dynamics
CO 4: Participate in decision-making processes, managing conflicts, and contributing to collaborative problem-solving.
CO5: Develop public speaking skills to confidently present ideas and messages to diverse audiences.

Subject and code: Fundamentals of Radio and TV - G 105 DC3.5

Course Outcomes:

CO1: Analyze the role of broadcast media in shaping public discourse.
CO2: Demonstrate effective interviewing, scriptwriting, and collaboration in a newsroom environment.
CO3: Create compelling and visually appealing news content for radio and television.
CO4: Deliver professional-quality broadcasts for radio and TV journalism

Subject and code: Practical : Fundamentals of Radio and TV -
G 105 DC4.5P

Course Outcomes:

CO1: Analyze the role of broadcast media in shaping public discourse.
CO2: Demonstrate effective interviewing, scriptwriting, and collaboration in a newsroom environment.
CO3: Create compelling and visually appealing news content for radio and television.
CO4: Deliver professional-quality broadcasts for radio and TV journalism

Semester- VI

Subject and code: Introduction to Digital Media - G 105 DC1.6

Course Outcomes:

CO 1: Understand the fundamentals of digital filmmaking
CO2: Compose shots using cinematographic techniques and discusses
CO3: Write digital media film scripts and screenplays
CO4: Edit digital film videos on digital platforms

**Subject and code Practical: Introduction to Digital media –
G 105 DC 2.6P**

Course Outcomes:

CO 1: Understand the fundamentals of digital filmmaking
CO2: Compose shots using cinematographic techniques and discusses
CO3: Write digital media film scripts and screenplays
CO4: Edit digital film videos on digital platforms

**Subject and code : Advertising and corporate Communication –
G 105 DC3.6**

Course Outcomes:

<p>CO1: To introduce students to the basic concept of advertising</p> <p>CO2: To familiarize the students with the concept of copywriting as selling through writing</p> <p>CO3: To learn the process of creating original, strategic, compelling copy for various mediums</p> <p>CO4: To gain a thorough understanding of PR skills</p> <p>CO5: To train students to generate, develop and express ideas effectively</p>
<p>Subject and code : Practical: Advertising and Corporate Communication - G 105 DC4.6P</p>
<p>Course Outcomes:</p>
<p>CO1: To introduce students to the basic concept of advertising</p> <p>CO2: To familiarize the students with the concept of copywriting as selling through writing</p> <p>CO3: To learn the process of creating original, strategic, compelling copy for various mediums</p> <p>CO4: To gain a thorough understanding of PR skills</p> <p>CO5: To train students to generate, develop and express ideas effectively</p>
<p>INTERNSHIP:</p> <ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 100 G SOCIAL WORK
PROGRAMME OUTCOMES	
<p>PO 1 : Empowerment of graduates with professional attitude and behavior</p> <p>PO 2 : Apply scientific knowledge and acquire effective communication skills in professional commitment</p> <p>PO 3 : Develop and engage scientific approach to meet human needs and identify them as social change maker towards transformation</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1 : Able to uphold values and ethics of Social Work</p> <p>PSO 2 : Able to perform diverse roles in various social work settings</p>	

PSO 3 : Able to work effectively in team environment.
 PSO 4 : Skilled to communicate effectively working with individuals
 PSO 5 : skilled to communicate effectively working with Groups
 PSO 6 : skilled to communicate effectively working with Communities
 PSO 7 : Demonstrate the spirit of volunteerism to reach out disadvantaged sections of the society.
 PSO 8 : Able to assess and intervene with the individuals, families, groups, organizations and communities
 PSO 9 : Develop zeal and enthusiasm to work within the framework of existing structure (Governmental and Nongovernmental)

Semester- I

Subject and code: Foundations for Social Work - G 111 DC1.1:

Course Outcomes:

CO1: To understand history and evolution of social work profession, both in India and the West
 CO2: To develop insights into the origin and development of ideologies and approaches to social Change.
 CO3: To develop Skills to understand contemporary reality in its historical context

Subject and code: : Social work Field Practicum 1 - G 111 DC2.1P

Course Outcomes:

CO1: To understand the basics of fieldwork, concept of self and fieldwork and the professional role of social workers.
 CO2: To critically understand and appreciate programmes and projects of governmental and on-governmental organizations.
 CO3: To enhance importance of skills in report writing and documentation

Subject and code: Fields of Social Work Practice G 111 OE1.1:

Course Outcomes:

CO1: To understand the fields of social work
 CO2: To know the different settings of social work To understand the competencies required to work in different settings of social work.:
 CO3: To critically understand and appreciate programmes and projects of governmental and on-governmental organizations.

Semester- II

Subject and code: Social Case Work G 111 DC1.2:

Course Outcomes:

CO1: To understand the individual, family and their problems and the social contextual factors affecting them
 CO2: To understand Social Casework as a method of Social Work practice
 CO3: To gain knowledge about the basic concepts, tools, techniques, processes and skills of working with individuals
 CO4: To develop an understanding of application of case work in diverse settings

Subject and code: Social Work Field Practicum-2 G 111 DC 2.2P

Course Outcomes:

CO1: To understand the basics of fieldwork, concept of self and fieldwork and the professional role of social workers.

CO2:To critically understand and appreciate programmes and projects of governmental and non-governmental organizations. CO3: To enhance importance of skills in report writing and documentation
Subject and code: Social Work Concerns for Women and Child Development G 111 OE2.2:
Course Outcomes:
CO1: To understand Social Work concerns for Women Development. CO2: To understand Social Work concerns for child Development CO3: To enhance social work practice with women and child development
Semester- III
Subject and code: Social Group Work G 111 DC1.3
Course Outcomes:
CO1. To understand the nature and types of groups CO2. To understand Social Group Work as a method of Social Work practice CO3. To know the basic concepts, tools, techniques, processes and Skills of working with groups CO4. To develop an understanding of the process of group development and group dynamics CO5. To develop an understanding of application of group work in diverse settings
Subject and code: Social Work Field Practicum 3 G 111 DC2.3P
Course Outcomes:
CO1. To gain experience of working with the people at individual, intra- group, community and organizational levels CO2. To critically understand and appreciate programmes and projects of the field work agency. CO3. To enhance importance of skills in report writing and documentation.
Subject and code: Social Development and Sustainable Development G 111 OE 1.3
Course Outcomes:
CO1. To gain experience of working with the people at individual, intra- group, community and organizational levels CO2. To critically understand and appreciate programmes and projects of the field work agency. CO3. To enhance importance of skills in report writing and documentation.
Semester- IV
Subject and code: Community Organization and Social Action G 111 DC1.4
Course Outcomes:
CO1. To equip with different approaches in Community Organization and Community development programs and Social Action. CO2. To develop an attitude and skills for participatory process. CO3. To provide students an opportunity to learn hands –on through field work experience.
Subject and code: Social Work Field Practicum 4 G 111 DC2.4P
Course Outcomes:

<p>CO1. To gain experience of working with the people at individual, intra-group, community and organizational levels</p> <p>CO2. To critically understand and appreciate programmes and projects of the field work agency.</p> <p>CO3. To enhance importance of skills of recording and documentation through report writing.</p>
<p>Subject and code: Disaster Management: Preparedness and Response G 111 OE 2.4</p>
<p>Course Outcomes:</p>
<p>CO1. To provide basic conceptual understanding of disasters and its relationships with development.</p> <p>CO2. To gain understand approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction.</p> <p>CO3. To provide broad understanding about the basic concepts of Disaster Management</p>
<p>Semester- V</p>
<p>Subject and code: Social Policy, Planning and Development - G 111 DC 1.5 V(a)</p>
<p>Course Outcomes:</p>
<p>CO1. Understand the concept of Social Policy and Social Planning;</p> <p>CO2. Understand the concept and nature of Development and Human Development.</p>
<p>Subject and code: Social Work Field Practicum - G 111 DC 2.5P</p>
<p>Course Outcomes:</p>
<p>CO 1: Develop an ability to study the various determinants of social policy like health, education, housing, employment, social and economic conditions at the local community level.</p> <p>CO 2: Develop an ability to understand the local politics and power structures</p> <p>CO 3: Develop a plan of action to organize one policy awareness program in community</p>
<p>Subject and code: Domains of Social Work Practice – I - G111 DC 3.5 V(b)</p>
<p>Course Outcomes:</p>
<p>CO1. Gain opportunity in understanding contemporary fields of social work profession</p> <p>CO2. Influence to practice, analyze and evaluate social work interventions.</p>
<p>Subject and code: Social Work Field Practicum - G 111 DC 4.5P</p>
<p>Course Outcomes:</p>
<p>CO 1: Understand the functioning of structured setting/agency-Primary or Secondary</p> <p>CO 2: Understand in depth the application of social work methods in dealing with individuals and groups.</p> <p>CO 3: Develop the ability to do interventions ensuring client’s participation.</p> <p>CO 4: Develop skills in recording, writing academic articles based on practical experience.</p>
<p>Semester- VI</p>
<p>Subject and code: Domains of Social Work Practice – 2 - G111 DC 1.6 VI(a)</p>

Course Outcomes:	
CO1. Develop understanding of different areas of social work practice like correctional social work, medical, psychiatric and school social work	
CO2. Know about the community and ecological development	
CO3. Understand the role and functions of social workers in different settings	
Subject and code: _ Social Welfare Administration - G111 DC2.6 VI(b)	
Course Outcomes:	
CO1. Understand concept of Social Welfare and Social Welfare Administration	
CO2. Understand the Structure and Components of Social Welfare Administration	
CO3. Understand the relevance of Social Welfare Administration for Social Workers	
Subject and code: _ Corporate Social Responsibility - G111 DC 3.6 VI©	
Course Outcomes:	
CO1. Understand the conceptual framework of CSR	
CO2. Understand the legal framework of CSR	
CO3. Understand the CSR practices and role of Social Workers	
Subject and code: _ Social Work Field Practicum - – G111 DC 4.6 (P) (VI b)	
Course Outcomes:	
CO 1: Understand the functioning of structured setting/agency-Primary or Secondary	
CO 2: Understand in depth the application of social work methods in dealing with Individuals and groups.	
CO 3: Develop the ability to do interventions ensuring client’s participation.	
CO 4: Develop skills in social work research, writing academic projects.	
INTERNSHIP:	
<ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences. 	

Department Name:	G 100 I PSYCHOLOGY
PROGRAMME OUTCOMES	
PO 1 Develop a strong knowledge base in psychology	
PO 2 Use scientific reasoning to interpret psychological phenomenon	
PO 3 Design and conduct psychological research in different areas of study.	
PO 4 Examine, explain, relate, recognize, accept and respect socio cultural diversity	
PO 5 Transfer classroom learning to real world problems.	
PO 6 Engage actively in service-learning activities to promote health, harmony, Human welfare and Well- being.	

PO 7 Adopt and Display values of hope, empathy, compassion, integrity and trust required to Build community, accept diversity, establish and maintain a sense of well-being.

PROGRAMME SPECIFIC OUTCOMES

PSO 1 : Demonstrate the ability to think critically and scientifically about human behaviour in different areas of study.

PSO 2 : Competence in understanding and developing scientific interventions to enhance human experience in various settings such as schools, industry, hospitals and community.

PSO 4 : Reflect, experience and use skills to bring about personal and social change.

PSO 5 : Understand the various manifestations of psychopathology and therapeutic techniques.

PSO 6 : Apply the basic principles of psychology to enhance human behavior at the workplace.

PSO 7 : Develop an understanding and application of the complex interplay of Bio psycho social factors impacting Health.

PSO 8 : Display competence in administering, scoring, reporting and analysis of psychometric testing.

Semester- I

Subject and code: Foundations of Behaviour-I - G106 DC1.1

Course Outcomes:

CO1 Understand the roots, history, its evolution and the goals governing the scientific study of human behaviour

CO2 Think critically and scientifically about behaviour and mental processes.

CO3 Compare and contrast major perspectives in psychology.

CO4 Describe and Evaluate basic research methods in psychological science.

CO5 Explain the biological/neurobiological underpinnings of behaviour

CO6 Demonstrate conceptual clarity and application of psychological concepts such as consciousness, sensation, perception, to everyday life.

CO 7 Exercise ethical principles and guidelines in psychological research.

CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

Subject and code: PRACTICALS: G106 DC2.1P

Course Outcomes:

CO1 Understand the roots, history, its evolution and the goals governing the scientific study of human behaviour

CO2 Think critically and scientifically about behaviour and mental processes.

CO3 Compare and contrast major perspectives in psychology.

CO4 Describe and Evaluate basic research methods in psychological science.

CO5 Explain the biological/neurobiological underpinnings of behaviour

CO6 Demonstrate conceptual clarity and application of psychological concepts such as consciousness, sensation, perception, to everyday life.

CO 7 Exercise ethical principles and guidelines in psychological research.

CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

Subject and code: Psychology of health and Wellbeing G106 OE1.1**Course Outcomes:**

CO1: Understand the spectrum of health and illness for better health management
CO2: Identify stresses in one's life and how to manage them
CO3: Understand a variety of health announcing health protective and health compromising behaviours and to be able to know their application in illness management
CO4: Know to identify human strengths and life enhancement

Semester- II**Subject and code: FOUNDATIONS OF BEHAVIOUR II G106 DC1.2****Course Outcomes:**

CO1 Understand the roots, history, its evolution and the goals governing the scientific study of human behaviour
CO2 Think critically and scientifically about behaviour and mental processes.
CO3 Compare and contrast major perspectives in psychology.
CO4 Describe and Evaluate basic research methods in psychological science.
CO5 Explain the biological/neurobiological underpinnings of behaviour
CO6 Demonstrate conceptual clarity and application of psychological concepts such as consciousness, learning, memory, motivation, emotion, personality and intelligence to everyday life.
CO7 Exercise ethical principles and guidelines in psychological research.
CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

Subject and code: Practicals I G106 DC2.2P**Course Outcomes:**

CO1 Understand the roots, history, its evolution and the goals governing the scientific study of human behaviour
CO2 Think critically and scientifically about behaviour and mental processes.
CO3 Compare and contrast major perspectives in psychology.
CO4 Describe and Evaluate basic research methods in psychological science.
CO5 Explain the biological/neurobiological underpinnings of behaviour
CO6 Demonstrate conceptual clarity and application of psychological concepts such as consciousness, learning, memory, motivation, emotion, personality and intelligence to everyday life.
CO7 Exercise ethical principles and guidelines in psychological research.
CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

Subject and code: Youth, Gender and identity G106 OE1.2

Course Outcomes:

CO1: Evaluate and understand the Gender identity and Gender role
 CO2: Critically evaluate and identify determinants youth relationships
 CO3: Demonstrate an awareness of the international context of Gender Identity.
 CO4: Exhibit the consciousness of issues related to youth, gender and identity
 CO5: Understand the importance of Law and Youth

Semester- III**Subject and code: Development through life –I G106 DC1.3****Course Outcomes:**

CO 1 Demonstrate the ability to think critically, analytically and to reason logically about contemporary issues in Child Development.

CO 2 Examine and discuss, the major theories of child development such as those of Piaget, Sigmund Freud, Vygotsky, Bowlby and Bronfenbrenner

CO 3 Describe and use various research designs and methods to study Children.

CO 4 Understand and analyze complex Biological, Social and Cultural factors which impact the major developmental milestones from Conception through Middle childhood

CO 5 Knowledge of advancement in medical science regarding various Prenatal diagnostic techniques, reproductive techniques and interventions during prenatal and post-natal life.

CO 6 Knowledge of post birth challenges, assessments and application of theories to Infants physical, cognitive and socio emotional Development.

CO 7 Display competence in administering, scoring, reporting and analysis of psychometric tests related to children and adolescents.

Subject and code: Practicals I G106 DC2.3P**Course Outcomes:**

CO 1 Demonstrate the ability to think critically, analytically and to reason logically about contemporary issues in Child Development.

CO 2 Examine and discuss, the major theories of child development such as those of Piaget, Sigmund Freud, Vygotsky, Bowlby and Bronfenbrenner

CO 3 Describe and use various research designs and methods to study Children.

CO 4 Understand and analyze complex Biological, Social and Cultural factors which impact the major developmental milestones from Conception through Middle childhood

Subject and code: Psychology & Mental Health: Positive Human Functioning G106 OE1.3**Course Outcomes:**

CO 1 Understand the need to focus on flourish and wellbeing by experiencing

positive emotions and humanity

CO 2 Develop and incorporate techniques to approach life and its challenges positively for good mental health

CO 3 Find meaning and purpose through meaning and value exercises to maintain a sense of well being

Semester- IV

Subject and code: Development Through Life –II G106 DC1.4

Course Outcomes:

CO 1 Demonstrate the ability to think critically, analytically and to reason logically about contemporary issues in Human development.

CO 2 Examine, discuss and apply the theories of Human development across life span

CO3 Apply the theories to physical, cognitive and socio emotional development from adolescence to old age and death

CO 4 Understand and analyze complex Biological, Social and Cultural factors which Impacts physical & sensory development, Identity, relationships, work, sexuality, social roles, and end of life.

CO 5 Application of the knowledge of human development across life and specific cohorts

CO 5 Describe and identify, Neuro developmental disorders, problems and challenges across the life span.

CO 6 Display competence in administering, scoring, reporting and analysis of psychometric tests related to children and adolescents.

Subject and code: Practicals I G106 DC2.4P

Course Outcomes:

CO 1 Demonstrate the ability to think critically, analytically and to reason logically about contemporary issues in Human development.

CO 2 Examine, discuss and apply the theories of Human development across life span

CO3 Apply the theories to physical, cognitive and socio emotional development from adolescence to old age and death

Subject and code: Community Psychology G106 OE1.4

Course Outcomes:

CO 1 Understand the elements of community psychology approach

CO 2. Examine and understand the complex individual–environment interactions to bring about social change among those who have limited resources and

opportunities.

CO 3 Gain perspectives and tools to promote a fair and equitable allocation of resources and Opportunities for meaningful changes in the community

Semester- V

Subject and code: SOCIAL PSYCHOLOGY - G106 DC1.5

Course Outcomes:

- CO 1 Understand Human behaviour in the social Context using various theories.
- CO 2 Explore prosocial behaviour and its outcome on the society
- CO 3 Discuss the factors that lead to attitude formation and its impact on society
- CO 4 Differentiate between prejudice, discrimination and stereotypes and discuss techniques to reduce it.

Subject and code: SOCIAL PSYCHOLOGY PRACTICALS - G106 DC2.5P

Course Outcomes:

- CO 1 Analyse the power of social influence, both the influence of individual on groups and vice versa
- CO 2 Apply the Principles of social Psychology to enhance Human experience
- CO 3 Competent to administer, score, report and analyze psychometric tests related to social behaviour

Subject and code: HEALTH PSYCHOLOGY - G106 DC3.5

Course Outcomes:

- CO 1 Describe the history and emergence of the field of health psychology
- CO 2 Understand and apply the biopsychosocial model of health to describe health and disease
- CO 3 Examine the role of biological and psycho social factors in the genesis of health and chronic illnesses such as diabetes, cardiovascular diseases, Cancer, HIV AIDs, illnesses of childhood, adolescents, and old age.
- CO 4 Understand the role of personality, gender, interpersonal relations, socio cultural influences and their linkage to risk, prevention, illness, and wellness

Subject and code: Health Psychology Practicals - G106 DC2.6P

Course Outcomes:

- CO 1 Apply the practical information gained to make lifestyle choices and changes.
- CO 2 Describe and explain the risk factors of leading cause of death, stress, pain and Coping.
- CO 3 Demonstrate the ability to use stress and pain management techniques, and strategies to prevent intentional and unintentional injuries.
- CO 4 Competence in administering, scoring, reporting and analysis of psychometric tests related to health.

Semester- VI	
Subject and code : ABNORMAL PSYCHOLOGY- G106 DC1.6	
Course Outcomes:	
CO 1 Distinguish between normal and abnormal behaviour.	
CO 2 Describe the process of Diagnosis	
CO 3 Analyze abnormal behaviour from multiple paradigms.	
CO 4 Describe, identify, analyze, and explain Anxiety, Obsessive- compulsive, Dissociative, Symptom, Psychotic, Depressive, Personality and Neurocognitive disorders.	
Subject and code: Abnormal Psychology Practicals	
Course Outcomes:	
CO 1: Apply evidence based therapeutic techniques to treat abnormal behaviour.	
CO 2 Competent to administer, score, report and analyze psychometric tests related to Mental health	
Subject and code: HUMAN RESOURCE MANAGEMENT - G106 DC3.6	
Course Outcomes:	
CO1. Understand the nature, objectives, and functions of HRM.	
CO2. Understand the processes of selection and tools of training.	
CO3. Know the tools of performance appraisal in work setting	
CO4 Apply the theories of leadership, motivation, and job satisfaction to enhance productivity	
CO5. Know the application of electronic in HR and management of international HR	
Subject and code: HUMAN RESOURCE MANAGEMENT PRACTICALS - G106 DC4.6P	
Course Outcomes:	
CO1: Apply the theories of leadership, motivation, and job satisfaction to enhance productivity	
CO2: Know the application of electronic in HR and management of international HR	
INTERNSHIP:	
<ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences. 	

Department Name:	G 100 O COMPUTER ANIMATION
PROGRAMME OUTCOMES	
PO1: Obtain a knowledge on fundamental and advanced aspects of computer animation,	

graphic design & visual effects.
 PO2: To innovate best practices for elements of design, web technology and Gaming.
 PO3: To explore the theories of multimedia and animation to design and develop 2D/3D animations, film-making, visual effects for the Interactive media
 PO4: Apply in depth knowledge of animation and the knowledge of principles of animation in every project.
 PO5: Able to work with professional skills in animation studios and production houses.

PROGRAMME SPECIFIC OUTCOMES

PSO 1 : Understand the techniques of 2D and 3D software.
 PSO2 : Understanding stop motion and basic traditional animation
 PSO3: Understand the concept of linear and nonlinear editing, Video Capture and VFX techniques
 PSO4: Understand the web designing method with interactive animation

Semester- I

**Subject and code: Graphic Design for Animation
 G 110 DC1.1/ G 512 DC1.1**

Course Outcomes:

CO1: Understand the basic principles of graphic design using Corel Draw & Photoshop including typography, compositing, color, and composition
 CO2: Design layouts for web pages, paper adverts, brochures, CD covers, package designing event and exhibition stall designs, pop ups, touch ups, color corrections paintings, drawings, converting B/W photo to color
 CO3: Understand the vector and bitmap graphics and its properties
 CO4: Understand different tools and features of vector and bitmap software's.
 CO5: Select and create appropriate art to convey specific artistic expression that effectively communicates the artist intent.
 CO6: To able to create different kinds of designs like Logo, Brochures, certificates, greetings cards, pamphlets, business cards etc.
 CO7: Creating GIF Animation files
 CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

**Subject and code: Graphic Design Lab
 G 110 DC1.1P/G 512 DC1.1P**

Course Outcomes:

CO1: Understand the basic principles of graphic design using Corel Draw & Photoshop including typography, compositing, color, and composition
 CO2: Design layouts for web pages, paper adverts, brochures, CD covers, package designing event and exhibition stall designs, pop ups, touch ups, color corrections paintings, drawings, converting B/W photo to color
 CO3: Understand the vector and bitmap graphics and its properties
 CO4: Understand different tools and features of vector and bitmap software's.
 CO5: Select and create appropriate art to convey specific artistic expression that effectively communicates the artist intent.
 CO6: To able to create different kinds of designs like Logo, Brochures, certificates, greetings cards, pamphlets, business cards etc.
 CO7: Creating GIF Animation files CO8 Display competence in administering, scoring,

reporting and analysis of psychometric tests.

**Subject and code: Environment & Character Sketching
G 110 OE 1.1**

Course Outcomes:

- CO1: Do shading, colouring and gesture drawings.
- CO2: Create different perspective sketching
- CO3: Understand principles of art in detail.
- CO4: Understand different pictorial drawings and dimensions.
- CO5: Draw and understand geometrical structures.

Semester- II

Subject and code: Pre-Production and 2D Animation G 110 DC1.2/G 512 DC1.2

Course Outcomes:

- CO1: Learn animation fundamentals and understand how animation works.
- CO2: Knowledge about using animation principles in 2D applications and understand the fundamental skills of 2D space
- CO3: Work on timeline and understand tools and features to create 2D drawings
- CO4: Work systematically on layers and masking for creating motion animation
- CO5: Rendering and exporting 2D animation files in different file formats.
- CO6: Create animation sequences that employ basic cinematography principles and storytelling skills to create, develop and execute animation sequences
- CO7: Develop, assemble and present a demo reel or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

**Subject and code: 2D Animation Lab
G 110 DC1.2P/G 512 DC1.2P**

Course Outcomes:

- CO1: Learn animation fundamentals and understand how animation works.
- CO2: Knowledge about using animation principles in 2D applications and understand the fundamental skills of 2D space
- CO3: Work on timeline and understand tools and features to create 2D drawings
- CO4: Work systematically on layers and masking for creating motion animation
- CO5: Rendering and exporting 2D animation files in different file formats.
- CO6: Create animation sequences that employ basic cinematography principles and storytelling skills to create, develop and execute animation sequences
- CO7: Develop, assemble and present a demo reel or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

Subject and code: Digital Designing G 110 OE 1.2

Course Outcomes:

- CO1: Understand digital design for print and web: resolutions, files formats, tools & menus, layouts.
- CO2: Design layouts for web pages, paper advertisements, brochures, CD covers, package designing event and exhibition stall designs, pop ups, color corrections paintings, drawings, converting B/W photo to color
- CO3: A student will get a complete overview of the whole print from design to the layout to print it
- CO4: Use basic Photoshop skills and concepts to develop effective graphics for both web and print media.
- CO5: Discover how to edit their own photographs to get rid of dust and scratches, fix the color, and correct image exposure understand how best to choose fonts and colors for digital designs
- CO6: Understand key industry-standard techniques, that are used in the print and design industries

Semester- III**Subject and code: Visual Effects G 110 DC1.3****Course Outcomes:**

- CO1: Understand the concept of linear and nonlinear editing.
- CO2: Understand the concept of transitions, layering.
- CO3: Mastering filmmaking terminology to communicate effectively throughout all stages of production.
- CO4: Creating quality media productions including skills in story development, producing, cinematography, editing, and audio production/post production.
- CO5: Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.
- CO6: Identify hardware and software protocols specific to the field of visual effects.
- CO7: Create photo-real images to match live action footage by the application of advanced rendering techniques.
- CO8: Integrate 2D and/or 3D computer generated imagery and live action elements using compositing techniques.

Subject and code: Visual Effects Lab G 110 DC2.3P**Course Outcomes:**

- CO1: Understand the concept of linear and nonlinear editing.
- CO2: Understand the concept of transitions, layering.
- CO3: Mastering filmmaking terminology to communicate effectively throughout all stages of production.
- CO4: Creating quality media productions including skills in story development, producing, cinematography, editing, and audio production/post production.

CO5: Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.

CO6: Identify hardware and software protocols specific to the field of visual effects.

CO7: Create photo-real images to match live action footage by the application of advanced rendering techniques.

CO8: Integrate 2D and/or 3D computer generated imagery and live action elements using compositing techniques.

Subject and code: History of animation G 110 OE 1.3

Course Outcomes:

CO1: Understanding how the techniques in the past made things the way they are today

CO2: Understanding the thoughts, ideas, and concepts of various fields artists in the past

CO3: Gives an In-Depth Look at the World Art

CO4: Understanding & orient ourselves in the present animation techniques

CO5: Understand how to Integrate Information from the past

Semester- IV

Subject and code: 3D Modelling G 110 DC1.4

Course Outcomes:

CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space

CO2: Creating different types of polygon models

CO3: Creating 3D objects using line & NURBS

CO4: Creating interior designs & exterior designs

CO5: Rendering and exporting 3D files in different image file formats.

CO6: Create different 3D environments, models, structures, architectures.

CO7: Understanding how mesh works in 3D modelling.

Subject and code: 3D Modelling Lab G 110 DC2.4P

Course Outcomes:

CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space

CO2: Creating different types of polygon models

CO3: Creating 3D objects using line & NURBS
CO4: Creating interior designs & exterior designs
CO5: Rendering and exporting 3D files in different image file formats.
CO6: Create different 3D environments, models, structures, architectures.
CO7: Understanding how mesh works in 3D modelling.
Subject and code: Video editing G 110 OE 1.4
Course Outcomes:
CO1: Identify and describe key terms, concepts, major trends and periods related to various modes of production.
CO2: Learn how to combine basic design principles in video editing.
CO3: Demonstrate skills required to create quality media productions
CO4: Apply methodological design process for construction of a television program.
CO5: Create an audio visual television program
Semester- V
Subject and code: 3D TEXTURING, CAMERA & LIGHTING - G 110 DC1.5
Course Outcomes:
CO- 1 Give detailed texturing and colouring to 3D characters or objects.
CO- 2 Understand how shaders are applied.
CO- 3 Understand different mapping done to enhance the details of the object.
CO- 4 Understand the concept of hair dynamics and different presets.
CO- 5 Creating camera animations.
CO- 6 Creating a desired lighting required for the 3D scene e.g. interiors, exteriors.
Subject and code: 3D TEXTURING LAB - G 110 DC 2.5P
Course Outcomes:
CO1: Understand the concept of hair dynamics and different presets.
CO2: Creating camera animations.
CO3: Creating a desired lighting required for the 3D scene e.g. interiors, exteriors.
Subject and code : WEB DESIGNING & DEVELOPMENT - G 110 DC 3.5
Course Outcomes:
CO1: Understand the principles of creating an effective web page, including an in-depth consideration of information architecture.
CO2: Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice.
CO3: Learn the language of the web: HTML and CSS..
Subject and code: WEB DESIGNING LAB – G 110 DC 4.5P
Course Outcomes:
CO1: Develop skills in digital imaging (Adobe Photoshop.)
CO2: Be able to embed social media content into web pages.
CO3: To create web elements like buttons, banners & Bars and of course complete UI

designs
Subject and code: STORY BOARD & SCRIPT WRITING –(Vocational)
Course Outcomes:
CO1: Write the scripts for movies and advertisements.
CO2: Learn the good and bad body languages and essence of cinema.
CO3: Develop skills in camera techniques and its meaning.
CO4: Gaining knowledge of communication skills.
CO5: Be able to understand and interpret movies.
Semester- VI
Subject and code : 3D RIGGING & ANIMATION - - G 110 DC 1.6
Course Outcomes:
CO1: Mastering 3D rigging and animation to bring characters, objects, and scenes to life
CO2: Able to work as a character animator, creating movements and expressions for characters in films, TV shows, video games, and advertisements.
CO3: Understand 3D animations to visualize buildings, interiors, and landscapes
CO4: Understand Animation to explain complex medical and scientific concepts, making them easier to understand for both professionals and the general public.
CO5: Understanding problem-solving skills as students figure out how to make characters move realistically, create convincing physics simulations, and troubleshoot technical issues.
CO6: Creating a Character and different types of object animation clips
Subject and code: 3D RIGGING & ANIMATION LAB - G110 DC 2.6P
Course Outcomes:
CO- 1 Moving the skelton & Bones of 3D objects.
CO- 2 Understand and create Object and character animation.
CO- 3 Attaching skin to the bones
Subject and code: 3D DYNAMICS & EFFECTS – G 110 DC 3.6
Course Outcomes:
CO1: Mastering Dynamics and effects, particle, and emitters
CO2: Able to work as a special effects artist, creating collisions and explosion for action films, TV shows, video games,
CO3: Understand 3D animations to visualize sfx, interiors, and landscapes
CO4: Understand Soft body and rigid body animation, making them easier to understand for both professionals and the general public.
CO5: Creating a Special effects and collider animations for advertisement company
Subject and code: TRADITIONAL ANIMATION (Vocational)
Course Outcomes:
CO1: Traditional animation skills make students a valuable asset to animation studios that create hand-drawn or hybrid animations.
CO2: Students will be able to work in the field of art and design, such as character design, storyboarding, concept art, and illustration.
CO3: Develop skills in drawing and sketching
CO4: Gaining knowledge to work as a freelance animator, taking on projects such as animated commercials, music videos, or short films.
CO5: Be able to understand to work in both traditional and digital animation pipelines
INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 300 A B. Com (Regular)
PROGRAMME OUTCOMES	
<p>PO 1: Develop a thorough understanding of various fundamental concepts of commerce, finance and economics and apply them in real life situations.</p> <p>PO 2: Apply knowledge, understanding and skill to identify the unsolved problems in rapidly changing business environment and analyse and assess these problems using appropriate methodology.</p> <p>PO 3: Develop a good value system leading to high ethical and moral conduct, to meet the expectations of established legal practices in the field of Commerce.</p> <p>PO 4: Stand with the requirement of business sector seeking youth fit for employment in the world of work, with the acquired competencies and attitudes.</p> <p>PO 5: Build a strong footing for advanced studies in Commerce and its allied areas on multiple disciplines concerned with commerce.</p> <p>PO 6: Engage in the process of reflective, independent and pragmatic thinking by understanding the concepts in every area of commerce and business.</p> <p>PO 7: Acquire various soft skills like communication, analytical and computer literacy required to manage complete business situation as well as life situations.</p> <p>PO 8: Apply their knowledge necessary to address complex environmental, gender related and legal issues at local, regional and global scale.</p> <p>PO 9: Write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources using language skills.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO-1: Understand various concepts and theories providing strong academic foundation in the field of economics and business.</p> <p>PSO-2: Acquaint and demonstrate practical skills in areas of Marketing, Banking, Business Management, Taxation and Human Resource Management.</p> <p>PSO-3: Acquire practical skills to work as tax consultant, audit consultant, investment consultant and other financial supporting services.</p> <p>PSO-4: Apply the practical skills in Accounting and Costing and able to handle independently accounts and costing functions in the business.</p> <p>PSO-5: Exhibit gender sensitivity with the knowledge gained from the aspects related to gender equity.</p> <p>PSO-6: Apply various technical ICT tools to explore, analyse and use the information for</p>	

business purposes.

Semester- I

**Subject and code: Financial Accounting
G 310DC1.1**

Course Outcomes:

- CO1: Understand the theoretical framework of accounting as well accounting standards.
- CO2: Demonstrate the preparation of financial statement of manufacturing and non-manufacturing entities of sole proprietors.
- CO3: Exercise the accounting treatments for consignment transactions & events in the books of consignor and consignee
- CO4: Understand the accounting treatment for royalty transactions & articulate the Royalty agreements.
- CO5: Outline the emerging trends in the field of accounting

**Subject and code: Management Principles and Applications
G310DC2.1**

Course Outcomes:

- CO1: Understand and identify the different theories of organizations, which are relevant in the present context.
- CO2: Design and demonstrate the strategic plan for the attainment of organizational goals.
- CO3: Differentiate the different types of authority and chose the best one in the present context.
- CO4: Compare and chose the different types of motivation factors and leadership styles.

**Subject and code: Principles of Marketing
G310DC3.1 (Open Elective Course)**

Course Outcomes:

- CO1: Understand the basic concepts of marketing and asses the marketing environment.
- CO2: Analyze the consumer behaviour in the present scenario and marketing segmentation.
- CO3: Discover the new product development & identify the factors affecting the price of a product in the present context.
- CO4: Judge the impact of promotional techniques on the customers & importance of channels of distribution.
- CO5: Outline the recent developments in the field of marketing. CO2: Create different perspective sketching

**Subject and code: Managerial Economics
G310OE1.1**

Course Outcomes:

- CO1: Describe the importance of managerial economics in decision making process.
- CO2. Learners would be able to apply the concepts and principles in their day to daylife.
- CO3. Analyze how economic agents make decisions and choices using theoretical knowledge & practical approach.

**Subject and code: Accounting for Everyone
G310OE2.1 (Open Elective Course)**

Course Outcomes:

CO1: Analyze various terms used in accounting;
 CO2. Make accounting entries and prepare cash book and other accounts necessary while running a business;
 CO3. Prepare accounting equation of various business transactions
 CO4: Analyze information from company's annual report;
 CO5: Comprehend the management reports of the company.

Subject and code: Financial Literacy
G310 OE3.1 (Open Elective Course)

Course Outcomes:

CO1. Describe the importance of financial literacy and list out the institutions providing financial services;
 CO2. Prepare financial plan and budget and manage personal finances;
 CO3. Open, avail, and manage/operate services offered by banks;
 CO4. Open, avail, and manage/operate services offered by post offices;
 CO5. Plan for life insurance and property insurance & select instrument for investment in shares

Semester- II

Subject and code: Advanced Financial Accounting
G310DC1.2

Course Outcomes:

CO1: Understand & compute the amount of claims for loss of stock & loss of Profit.
 CO2: Learn various methods of accounting for hire purchase transactions.
 CO3: Deal with the inter-departmental transfers and their accounting treatment.
 CO4: Demonstrate various accounting treatments for dependent & independent branches.
 CO5: Prepare financial statements from incomplete records.

Subject and code: Business Mathematics
G310 DC2.2

Course Outcomes:

CO1: Understand the number system and indices applications in solving basic business problems.
 CO2: Apply concept of commercial arithmetic concepts to solve business problems.
 CO3: Make use of theory of equation in solving the business problems in the present context.
 CO4: Understand and apply the concepts of Set Theory, Permutations & Combinations and Matrices solving business problems.
 CO5: Apply measurement of solids in solving simple business problems.

Subject and code : Corporate Administration
G310DC3.2

Course Outcomes:

- CO1: Understand the framework of Companies Act of 2013 and different kind of companies.
- CO2: Identify the stages and documents involved in the formation of companies in India.
- CO3: Analyze the role, responsibilities and functions of Key management Personnel in Corporate Administration.
- CO4: Examine the procedure involved in the corporate meeting and the role of company secretary in the meeting.
- CO5: Evaluate the role of liquidator in the process of winding up of the company.

**Subject and code : Law and Practice of Banking
G 310DC4.2**

Course Outcomes:

- CO1: Summarize the relationship between Banker & customer and different types of functions of banker.
- CO2: Analyse the role, functions and duties of paying and collecting banker.
- CO3: Make use of the procedure involved in opening and operating different accounts.
- CO4: Examine the different types of negotiable instrument & their relevance in the present context.
- CO5: Estimate possible developments in the banking sector in the upcoming days.

**Subject and code : PUBLIC FINANCE
G 310 OE1.2 (Open Elective Course)**

Course Outcomes:

- CO1: Identify the basis of Money and sources of Public Finance
- CO2: Identify the stages of business cycles and take appropriate decisions.

**Subject and code : Financial Environment
G 310 OE2.2 (Open Elective Course)**

Course Outcomes:

- CO1. Understand the fundamentals of Indian Economy and its significance.
- CO2. Evaluate the impact of monetary policy on the stakeholders of the Economy.
- CO3. Assess the impact of fiscal policy on the stakeholders of the Economy.
- CO4. Examine the status of inflation, unemployment and labour market in India
- CO5. Inference the financial sector reforms in India.

**Subject and code : Investing in Stock Markets
G 310 OE3.2 (Open Elective Course)**

Course Outcomes:

- CO1: Explain the basics of investing in the stock market, the investment environment as well as risk & return.
- CO2. Analyze Indian securities market;
- CO3. Examine EIC framework and conduct fundamental analysis;
- CO4. Perform technical analysis;
- CO5. Invest in mutual funds market.

Semester- III

**Subject and code: Corporate Accounting
G310DC1.3**

Course Outcomes:

- CO 1: Maintain the books of accounts and pass accounting entries of corporate entities.
- CO 2: Prepare the annual accounts of companies as per the Companies Act 2013
- CO 3: Independently value the goodwill and shares for the benefit of stakeholders of the corporate entities.
- CO 4: Get an awareness of current issues of social accounting, environmental accounting, buy back of shares and Human Resource Accounting

**Subject and code: Business Statistics
G310DC2.3****Course Outcomes:**

- CO1: Identify a statistical method for solving practical problems.
- CO2: Discuss critically the uses and limitation of statistical techniques.
- CO3: Describe and discuss the key terminology, concepts, tools and techniques used in business statistical analysis.
- CO4: Evaluate critically the underlying assumptions of analysis tools.

**Subject and code: Cost Accounting
G310DC3.3****Course Outcomes:**

- CO 1: Apply the knowledge of basic concepts of cost accounting.
- CO 2: Execute the preparation of cost sheet.
- CO 3: Understand the concept of material control
- CO 4: Analyse overhead cost classifications and methods of absorption of overheads
- CO 5: Identify the causes of disagreements in profits and reconcile the same.

**Subject and code: Entrepreneurial skills
G310OE1.3 (Open Elective Course)****Course Outcomes:**

- CO1: Learn skills to be an effective and capable entrepreneur.
- CO2: Comprehend the key factors influencing entrepreneurial possibilities.
- CO3: Recognize and creatively think to design and innovate unique business opportunities.
- CO4: Understand the skills and knowledge for running and managing a new business.

**Subject and code: Advertising Skills
G310OE2.3(Open Elective Course)****Course Outcomes:**

- CO1: Explain types of advertising media.

CO2: Identify the factors that affect media selection.
CO3: To learn evolve advertising strategy, formulate budget
CO4: Understand ethical aspects in advertising
CO5: Familiarize online portals in advertising

**Subject and code: Modern Bank Management
G310OE3.3 (Open Elective Course)**

Course Outcomes:

CO 1: Have clear understanding of the concepts and operations of modern banks
CO 2: Get knowledge in functions of RBI and other banks.
CO 3: Understand various modern banking products and services offered.

Semester- IV

**Subject and code: Advanced Corporate Accounting
G310DC1.4**

Course Outcomes:

CO1: Differentiate between Amalgamation and Restructuring and their accounting procedures
CO2: To prepare consolidated financial statements of Holding and Subsidiary Companies
CO3: Understand the implications IFRS and their significance in the corporate accounting
CO4: Understand the concept of value added and value added statement in corporate accounting.
CO5: Account for corporate brands

**Subject and code: Costing Methods & Techniques
G310DC2.4**

Course Outcomes:

CO1: Understand the concept of Job, Batch and Contract costing.
CO2: Apply the knowledge gained in the preparation of a budget and use budgets for performance evaluation after flexing the budget.
CO3: Interpret variable cost variances and fixed cost variances.
CO4: Explain the concept of cost audit and cost accounting records.

**Subject and code: Business Regulatory Framework
G310DC3.4**

Course Outcomes:

CO1: Understand the concept of Business Regulatory Framework
CO2: Able to apply the Rules and Regulations associated with business
CO3: Ability to understand the legal provisions to enter into contract

CO4: Recognize and identify the extent to which law is important in business dealings.
Subject and code: Financial Education and Investment Awareness G 702 AE1.4 - Skill Enhancement Course
Course Outcomes:
CO1: Understand the concept of Business Regulatory Framework CO2: Able to apply the Rules and Regulations associated with business CO3: Ability to understand the legal provisions to enter into contract CO4: Recognize and identify the extent to which law is important in business dealings.
Semester- V
Subject and code: Financial Management - G 310 DC1.5
Course Outcomes:
CO1: Understand the role of financial managers effectively in an organization. CO2: Apply the compounding & discounting techniques for time value of money. CO3: Take investment decision with appropriate capital budgeting techniques for investment proposals. CO4: Understand the factors influencing the capital structure of an organization. CO5: Estimate the working capital requirement for the smooth running of the business
Subject and code: Income Tax Law and Practice – I - G 310 DC2.5
Course Outcomes:
CO1: Develop working knowledge of taxation system in India CO2: Understand the provisions for determining the residential status of an Individual. CO3: Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits. CO4: Compute the income house property for different categories of house property business or profession
Subject and code: PRINCIPLES AND PRACTICE OF AUDITING - G 310 DC3.5
Course Outcomes:
CO1: Understand the conceptual framework of auditing. CO2: Examine the risk assessment and internal control in auditing CO3: Comprehend the relevance of IT in audit and audit sampling for testing. CO4: Examine the company audit and the procedure involved in the audit of different entities. CO5: Gain knowledge on different aspect of audit reporting and conceptual framework applicable on professional accountants.
Subject and code Financial Institutions and Markets – G 310 DE1a.5/ G 310 DE2a.5
Course Outcomes:
CO1: Understand the structure of Indian financial system and its constituents. CO2: Outline the role of capital and money market in economic development.

CO3: Comprehend primary and secondary market and its relevance in capital formation.
CO4: Appraise the role played by banking and development financial institutions in economic development so far.
CO5: Understand the different types of NBFCs and their contribution

Subject and code: RETAIL MANAGEMENT - G 310 DE1b.5/ G 310 DE2b.5

Course Outcomes:

CO1: Understand the contemporary of retail management, issues, strategies and trends in Retailing.
CO2: Utilize the theories and strategies of retail planning.
CO3: Perceive the role and responsibilities of store manager and examine the visual merchandising and its techniques in the present context.
CO4: Prioritize the factors to be considered while fixing the price in retailing.
CO5: Comprehend the emerging trends in Retail Industry

Subject and code: HUMAN RESOURCES DEVELOPMENT - G 310 DE1c.5/ G 310 DE2c.5

Course Outcomes:

CO1: Understand the need of HRD.
CO2: Comprehend the framework of HRD.
CO3: Know the models for evaluating the HRD programs.
CO4: Comprehend the need for employee counselling.
CO5: Apprehend the HR performance.

Subject and code: BASICS OF BUSINESS ANALYTICS - G 310 DE1d.5/ G 310 DE2d.5

Course Outcomes:

CO1: Understand analytical applications in practice.
CO2: Validate sources of data, use statistical resources and apply tools and techniques learnt to solve real time problems.
CO3: Formulate and manipulate business models, using quantitative methods including spreadsheets and graphical methods, in order to find solutions to real time problems.
CO4: Be aware about the emerging trends in the world of analytics.

Subject and code: Indian Accounting Standards-1 - G 310 DE1e.5/ G 310 DE2e.5

Course Outcomes

CO1: Understand the need and benefits of accounting standards.
CO2: Prepare the financial statements as Indian Accounting standards.
CO3: Comprehend the requirements of Indian Accounting Standards for recognition, measurement and disclosures of certain items appear in financial statements
CO4: Understand the Accounting Standards for Items that do not Appear in Financial Statements

Subject and code: GST-Law & Practice - G310VOC1.5

Course Outcomes

CO1: Comprehend the concepts of Goods and Services tax.
CO2: Understand the fundamentals of GST.
CO3: Analyse the GST Procedures in the Business.
CO4: Know the GST Assessment and its computation

Subject and code: Digital Marketing - G310VOC2.5
Course Outcomes
CO1: Gain knowledge on Digital Marketing, Email marketing and Content marketing. CO2: Understand Search Engine Optimization tools and techniques CO3: Gain skills on creation of Google AdWords & Google AdSense CO4: Gain knowledge on Social Media Marketing and Web Analytics. CO5: Gain knowledge on YouTube Advertising & Conversions
Subject and code : Employability Skills - G 710 SB1.5
Course Outcomes
CO1: Develop systematic problem-solving abilities. CO2: Enhance verbal and non-verbal reasoning skills. CO3: Improve numerical and analytical abilities. CO4: Enhance English language and communication skills
Semester- VI
Subject and code: Advanced Financial Management - G 310 DC1.6
Course Outcomes:
CO1: Understand and determine the overall cost of capital. CO2: Comprehend the different advanced capital budgeting techniques. CO3: Understand the importance of dividend decisions. CO4: Evaluate mergers and acquisition. CO5: Enable the ethical and governance issues in financial management.
Subject and code: Income Tax Law & Practice – II - G310 DC2.6
Course Outcomes:
CO1: Gain knowledge of the provisions of Income Tax Act, 1961 relating to taxation capital gains and other incomes. CO2: Understand various deductions available to Individuals u/s 80. CO3: Demonstrate the computation of total income of an Individual.
Subject and code : Management Accounting - G 310 DC3.6
Course Outcomes:
CO1: Demonstrate the significance of management accounting in decision making. CO2: Analyse and interpret the corporate financial statements by using various techniques. CO3: Compare the financial performance of corporates through ratio analysis. CO4: Understand the latest provisions in preparing cash flow statement. CO5: Comprehend the significance of management audit and examine the corporate reports of Management Review and Governance.
Subject and code: Investment Management - G 310 DE1a.6/ G 310 DE2a.6
Course Outcomes:
CO1: Understand the concept of investments, its features and various instruments. CO2: Comprehend the functioning of secondary market in India. CO3: Underline the concept of risk and return and their relevance in purchasing and selling of securities.

CO4: Illustrate the valuation of securities and finding out the values for purchase and sale of securities.

CO5: Demonstrate the fundamental analysis to analyse the company for purchase and sale of securities and technical analysis for trading in the share market.

Subject and code: Customer Relationship Management - G 310 DE1b.6/ G 310 DE2b.6

Course Outcomes:

CO1: To be aware of the nuances of customer relationship.
CO2: To analyze the CRM link with the other aspects of marketing.
CO3: To impart the basic knowledge of the Role of CRM in increasing the sales of the company.
CO4: To make the students aware of the different CRM models in service industry.
To make the students aware and analyze the different issues in CRM

Subject and code: Cultural Diversity at Work Place - G 310 DE 1 c. 6 / G 310 DE 2 c. 6

Course Outcomes:

CO-1: Understand, interpret question reflect upon and engage with the notion of "diversity".
CO2: Recall the cultural diversity at work place in an organization.
CO3: Support the business case for workforce diversity and inclusion.
CO4: Identify diversity and work respecting cross cultural environment.
CO5: Assess contemporary organizational strategies for managing workforce diversity and inclusion.

Subject and code: Human Resource Analytics - : G 310 DE1d.6/ G 310 DE2d.6

Course Outcomes:

CO1: Identify a list of HR metrics relevant to an organization's mission or goals.
CO2: Apply best practices for using HR analytics to support making data-driven decisions.
CO3: Demonstrate the use of Analytical techniques to analyse and interpret HR data

Subject and code: Indian Accounting Standards-2 - G 310 DE1e.6/ G 310 DE2e.6

Course Outcomes:

CO1: Understand the preparation of consolidated financial statements as per Ind AS
CO2: Learn the disclosures in the financial statements
CO3: Understand the latest provisions of measurement-based accounting policies.
CO4: Comprehend the Accounting and Reporting of Financial Instruments
CO5: Analyse the Revenue based accounting standard

Subject and code : BUSINESS TAXATION - G310VOC1.6**Course Outcomes:**

CO1: Comprehend the assessment of partnership Firms and determine the tax liability.
 CO2: Comprehend the assessment of corporate entities and determine the tax liability.
 CO3: Equip with understanding of intensive knowledge on analysis of all forms of ITR Forms along with the Overview ITR Forms and e-filing.

Subject and code : E-Commerce - G310VOC2.6**Course Outcomes:**

CO1: Comprehend the concepts of E-commerce
 CO2: Understand the e-retailing benefits and key success factors
 CO3: Analyse the benefits of EDI
 CO4: Understand Cyber security
 CO5: Know the Issues in E-commerce.

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improve the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:**G 300 B****B. Com (CA INTEGRATED)****PROGRAMME OUTCOMES**

PO1: Students will be able to critically analyze the Indian Accounting standards and unbiased reporting to concerned authorities in the capacity of a Chartered Accountant.
 PO2: Students will be able to effectively communicate within and outside the business organisations by developing effective listening, speaking or expressing fluently in different languages through electronic media and thereby connecting people and the business.
 PO3: Students will be able to interact freely with members of national body like ICAI, in parallel collaboration with KVC Academy and take their guidance to further their careers as Chartered Accountants.
 PO4: Students will demonstrate empathetic concerns towards marginalized societies and contribute towards responsible auditing leading to businesses which enhance economic development of the nation.
 PO5: Students will be able to deal with ethical issues while reporting and inculcate high value system by avoiding misuse of public funds, frauds and scams. They will accept responsibility by being truthful and honest in their careers as Chartered Accountants, by upholding International Accounting Standards.
 PO6: By learning national and international environmental issues, students will show

sensitivity towards sustainability and maintain ecological balance in large and small business organisations by effectively auditing CSR activities.

PO7: Students will develop the ability to learn constantly through-out their careers as Chartered Accountants and thereby contribute significantly towards changes that take place in economic and business world.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Understand and analyze the Indian Accounting standards and fundamental accounting concepts and conventions along with preparation of annual accounts of proprietary and professional concerns.

PSO2: Develop abilities and applications of specific accounting standards and legislations to various business transactions.

PSO3: Understand environmental issues, Laws of Partnership, National Income and its measurements and thereby develop entrepreneurship qualities.

PSO4: Analyze the provisions of company law and acquire the abilities to address its application in auditing the company's books of accounts.

PSO5: Understand basic concepts of Cost and Management Accounting and learning to prepare Cost Sheets by integrating accounting systems.

PSO6: Understanding the provisions of income-tax laws and acquire the ability to apply such knowledge to make computations and address application-oriented issues.

Semester- I

Subject and code: Financial Accounting- I - G 340DC1.1

Course Outcomes:

CO1. Students will have the basic knowledge of Accounting Concepts, Principles and Conventions.

CO2. Understand the evolution and importance of Accounting Standards used while maintaining and reporting financial statements.

CO3. Ability to Prepare Trial balance, rectify errors and prepare Bank Reconciliation statement.

CO4. Able to calculate Costs of inventories, understand the basis of valuing inventory and maintain necessary records.

CO5. Understand the concepts of depreciation, apply various methods of depreciation while preparing financial statements.

CO6. Ability to analyse special transactions and give accounting treatment for bills of exchange, promissory notes, sale of goods on approval and return basis.

Subject and code: Business Law - G340 DC2.1

Course Outcomes:

CO1. Define Indian Contract Act, 1872 and understand the legal rules of valid contract, valid consideration and rules of offer and acceptance

CO2. Understand the legality of Minors Contract, rules relating to validity of a contract with minor, concepts of coercion, undue influence, Fraud, Misrepresentation, Mistake, wagering agreements.

CO3. Ability to understand and define the Sale of Goods Act, 1930, elements of contract of sale, agreement to sell, warranties and guarantees.

CO4. Understand the concept of Ownership of goods, legal implications involved in transfer of ownership of goods, right of disposal of goods.

CO5. Ability to apply various legal laws involved in day to day dealing of business transactions and understand its importance.

Subject and code: Business Statistics - G340DC3.1

Course Outcomes:

CO1. Ability to grasp concepts like Correlation and Regression and its applicability in research and findings.

CO2. Develop the skill to apply statistical methods in making decisions based on probability of business events.

CO3. Ability to calculate and find out expected values of a random variable and mathematical expectation.

CO4. Understand concepts of Theoretical Distributions involving calculation of Binomial distribution and Poisson distribution.

CO5. Analyse basic application and normal distribution of statistical data.

Subject and code: Managerial Economics - G340OE1.1

Course Outcomes:

CO1: Will acquaint with the basic knowledge on the concept of business economics

CO2: Ability to understand the consumer behavior in different market situations

CO3: Understand market structure and demand analysis

Semester- II

Subject and code: Advanced Financial Accounting I - G340 DC1.2

Course Outcomes:

CO1. Ability to understand and analyse special accounting transactions

CO2. Identify the method to prepare and present financial statements of various business entities.

CO3. Analyse and calculate special transactions in accounting like, Average Due Date and prepare Account Current.

CO4. Ability to prepare Final Accounts of Sole Proprietors, Partnerships and Not for Profit Organisations.

CO5. Describe the accounting system of Joint Stock Companies, understand the concept of shares and debentures, forfeiture, reissue of shares and be able to prepare final accounts of Companies in the form of Statement of Profit and Loss and Balance sheet.

Subject and code : Logical Reasoning - G340 DC2.2

Course Outcomes:

CO1. Symbolise Series, types of series, Coding and Decoding of letters and numbers.

CO2. Identify Direction tests of North, South, East, West and seating arrangements depending on Linear, Circular and Polygon structures.

CO3. Understand and evaluate Blood Relations and Syllogism.

CO4. Develop Logical thinking in categorical propositions like hypothetical and disjunctive propositions.

**Subject and code : BUSINESS & COMMERCIAL KNOWLEDGE
G340 DC3.2**

Course Outcomes:

CO1. To evaluate the broad economic environment issues relating to the business, like

Micro and Macro business environment.
 CO2. Understand and apply the laws of partnership and Limited Liability Partnership.
 CO3. Ability to understand the various common business terminologies used in finance and marketing.
 CO4. Identify the features and classification of a company as per the Companies Act of 2013.
 CO5. Describe the process of incorporation of a company and draft the documents like Memorandum of Association and Articles of Association.

Subject and code : Managerial Economics – II - G 340DC4.2

Course Outcomes:

CO1: Acquaint with the advanced knowledge on the concept of managerial economics
 CO2: Understand consumer behavior in different market situations
 CO3: Understand market structure and demand analysis

Semester- III

Subject and code: Advanced Financial Accounting II - G340 DC1.3

Course Outcomes:

CO1: Understand of the provisions of income-tax law and apply the same while filing income tax returns.
 CO2: Ability to apply income tax knowledge to make computations and address application-oriented issues.
 CO3: Calculate taxable income for corporates
 CO4: Compute Annual value of Self occupied and let out properties

Subject and code: TAX LAWS AND PRACTICE - G340DC2.3

Course Outcomes:

CO1: Identify a statistical method for solving practical problems.
 CO2: Discuss critically the uses and limitation of statistical techniques.
 CO3: Describe and discuss the key terminology, concepts, tools and techniques used in business statistical analysis.
 CO4: Evaluate critically the underlying assumptions of analysis tools.

Subject and code: Cost Accounting - G340DC3.3

Course Outcomes:

CO1: Ability to develop an understanding of the basic concepts and applications to establish the cost associated with the production of products
 CO2: Apply provision of services and use the same to determine prices.
 CO3: Develop an understanding of cost accounting statements.
 CO4: Acquire the ability to apply cost information for cost ascertainment, planning, control and decision-making.

Subject and code :CORPORATE LAW - G340 OE1.3 (Open Elective Course)

Course Outcomes:

CO1: Develop an understanding of the provisions of company law

CO2: Acquire the ability to address application-oriented issues.

CO3: Ability to draft prospectus of the company

CO4: Understand the Companies Act and its provisions.

Subject and code: Advertising Skills - G340OE2.3 (Open Elective Course)

Course Outcomes:

CO1: Explain types of advertising media.

CO2: Identify the factors that affect media selection.

CO3: To learn evolve advertising strategy, formulate budget

CO4: Understand ethical aspects in advertising

CO5: Familiarize online portals in advertising

Subject and code: Entrepreneurial skills - G340OE3.3 (Open Elective Course)

Course Outcomes:

CO1: Learn skills to be an effective and capable entrepreneur.

CO2: Comprehend the key factors influencing entrepreneurial possibilities.

CO3: Recognize and creatively think to design and innovate unique business opportunities.

CO4: Understand the skills and knowledge for running and managing a new business.

Subject and code: Modern Bank Management - G340OE4.3 (Open Elective Course)

Course Outcomes:

CO 1: Have clear understanding of the concepts and operations of modern banks

CO 2: Get knowledge in functions of RBI and other banks.

CO 3: Understand various modern banking products and services offered.

Semester- IV

Subject and code: Corporate Accounting - G340 DC1.4

Course Outcomes:

CO1: Gain basic knowledge in Accounting Standards and IFRS

CO2: Acquaint with practical knowledge in redemption of debentures

CO3: Understand the accounting aspects relating to Bonus and rights issue

CO4: Understand the concept and accounting relating to Cashflow statements

Subject and code: Costing Methods & Techniques - G340DC2.4

Course Outcomes:

CO1: Understand the basic concepts and processes used to determine product

CO2: Ability to interpret cost accounting statements

CO3: Analyze and evaluate information for cost ascertainment, planning, control and decision making.

Subject and code: TAX LAWS AND PRACTICE II - G340DC3.4

Course Outcomes:

CO1: Develop an understanding of the provisions of income-tax law

CO2: Acquire the ability to apply such knowledge to make computations

CO3: Ability to address application-oriented issues.

CO4: Compute total income and tax liability of individuals

**Subject and code: Business Ethics (Open Elective Course)
G340OE1.4**

Course Outcomes:

CO1: Understand the basics of ethics

CO2: Make a distinction between morality and ethics

CO3: Analyze the case studies and make interpretations

CO4: Prepare reports based on ethical code of conduct in an organization.

**Subject and code: Corporate Governance (Open Elective Course)
G340OE2.4**

Course Outcomes:

CO1: Analyze fundamental theories of ethics

CO2: Make a distinction between morality and ethics

CO3: Analyze the case studies and make interpretations

CO4: Prepare reports based on ethical code of conduct in an organization.

**Subject and code: International Trade (Open Elective Course)
G340OE3.4**

Course Outcomes:

CO1: Analysis of trade models in depth in order to discuss the benefits and consequences of international trade and globalization.

CO2: The course will slightly delve into international finance in order to discuss different exchange

rate regimes, their effect on monetary/fiscal policy, and economic integration.

CO3: Understand the legal procedures involved in International Business.

CO4: Recognize the different types of economic integrations.

CO5: Understand and analyze the operations of MNCs through real case assessment.

CO6: Evaluate India's foreign trade status

Subject and code: ADVANCED ACCOUNTING – I - G 340 DC1.5

Course Outcomes:

CO1: To acquire the ability to apply specific Accounting Standards, Guidance Notes and legislations to different transactions and events and in preparation and presentation of financial statements of business entities;

CO2: To understand and apply financial reporting and regulatory requirements of Banking, Financial services.

CO3. Analyse the effect of related party transactions in the financial position & profit or loss due to existence of such related parties.

CO4. Evaluate contingent payments to employee shareholders and acquirer share-based payment awards exchanged for awards held by the acquiree's employees.

Subject and code: FINANCIAL MANAGEMENT-I - G 340 DC2.5

Course Outcomes:

CO1. To Develop an understanding of various aspects of Financial Management and

CO2. To acquire the ability to apply such knowledge in decision-making.

CO3. To analyze the financing in the International market by understanding various financial instrument prevalent in the international market.

CO4. To Analyze the ratios from the perspective of investors, lenders, suppliers, managers etc. to evaluate the profitability and financial position of an entity..

Subject and code: ADVANCED COSTING TECHNIQUES-I - G 340 DE1.5

Course Outcomes:

CO1: Ability to develop an understanding of the basic concepts and applications to establish the cost associated with the production of products

CO2: Apply provision of services and use the same to determine prices.

CO3: Develop an understanding of cost accounting statements.

CO4: Acquire the ability to apply cost information for cost ascertainment, planning, control and decision-making.

Subject and code: STRATEGIC MANAGEMENT - G 340 OE2.5

Course Outcomes:

CO1. To develop an understanding of strategic management concepts and techniques. And examine the criticality of the business environment in strategic analysis.

CO2. To acquire the ability to apply the same in business situations.

CO3. Identifying strategic decisions and behaviour within a firm. And discuss the relevance thereof in the modern business world.

CO4. Examine the role of firm-level resources and competencies in shaping the strategic advantage of the firm.

Subject and code: INTERNATIONAL TAXATION - G340 VO1.5

Course Outcomes:

CO1: To develop an understanding of the concepts, principles and provisions relevant to international taxation.

CO2: To Acquire the ability to apply such knowledge to make computations and address issues in practical case scenarios.

CO3: To analyse global taxation related scenarios.

CO4: To understand the taxation treaties and agreements that have been entered into between different countries for effective exchange of information

Subject and code: Employability Skills - G 710 SB1.5

Course Outcomes:

CO1: Develop systematic problem-solving abilities.

CO2: Enhance verbal and non-verbal reasoning skills.

CO3: Improve numerical and analytical abilities.

CO4: Enhance English language and communication skills.

Semester- VI

Subject and code: ADVANCED ACCOUNTING – II - G 340 DC1.6

Course Outcomes:

CO1. Analyse Key takeaways from guidance notes on Division II to Schedule III to the companies Act, 2013.

CO2. To acquire the ability to apply specific Accounting Standards, Guidance Notes and legislations to different transactions and events and in preparation and presentation of financial statements of business entities;

CO3. Identifying the format of balance sheet, statement of changes in equity, profit and loss and significant notes related to them as given in Division II to schedule III to the companies Act, 2013.

CO4. To understand and apply financial reporting and regulatory requirements of Banking, Financial services

Subject and code: FINANCIAL MANAGEMENT-II - G 340 DC2.6

Course Outcomes:

CO1. To Develop an understanding of various aspects of Financial Management.

CO2. Understanding the various components of working capital with its management.

CO3. Examine the role and functions of Finance executives in an entity and Discuss Financial Distress and Insolvency.

CO4. Applying the concepts of the various investment evaluation techniques for capital investment in decision making.

Subject and code: AUDITING AND ASSURANCE-II - G 340 DC3.6

Course Outcomes:

CO1. Understanding practicality of above concepts using examples and case studies and procedures to be adopted for auditing of Not-for-profit organization (NGO's), Charitable institutions.

CO2. Understanding the audit approach for items of profit and loss in case of banks.

CO3. To acquire the ability to apply the same in audit and attestation engagements.

CO4. To develop an understanding of the concepts in auditing.

Subject and code: ADVANCED COSTING TECHNIQUES-II - G 340 OE1.6

Course Outcomes:

CO1: Understand the basic concepts and processes used to determine product.

CO2: Ability to interpret cost accounting statements. Understanding the various methods of apportionment of joint costs to joint products and to by products.

CO3: Analyse and evaluate information for cost ascertainment, planning, control and decision making.

CO4: Analysing and computing variances related to Material, Labour and Overhead.

Subject and code: STRATEGIC MANAGEMENT-II - G 340 OE 2.6

Course Outcomes:
<p>C01. To develop an understanding of strategic management concepts and techniques. And examine the criticality of the business environment in strategic analysis.</p> <p>C02. To acquire the ability to apply the same in business situations.</p> <p>C03. Identifying strategic decisions and behaviour within a firm. And discuss the relevance thereof in the modern business world.</p> <p>C04. Examine the role of firm-level resources and competencies in shaping the strategic advantage of the firm.</p>
Subject and code: CORPORATE STRATEGIES - G340 VO1.6
Course Outcomes:
<p>C01: To acquire the ability to apply financial management theories and techniques in strategic decision making.</p> <p>C02. To develop an understanding of various aspects of Financial Management and acquire the ability to apply such knowledge in decision-making</p>
INTERNSHIP:
<ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 300 C B. Com (ACCA EMBEDDED)
PROGRAMME OUTCOMES	
<p>PO 1: Students will be able to critically analyze the Global Accounting standards and reporting while making a decision as finance and administrative Executives in the capacity of an ACA Affiliate.</p> <p>PO2: Students will be able to effectively communicate within and outside the multi-cultural organisations at a global level by frequent interactions leading to effective listening and interpreting matters concerned thus develop negotiating skills.</p> <p>PO3: Students will be able to interact freely with members of global body like ISDC, with which the college has MOU and take their guidance to enrich their global careers.</p> <p>PO4: Students will demonstrate empathetic concerns towards global citizens and contribute towards the development of the various nations, by being well informed regarding Corporate Social Responsibility issues and actively participating in resolving international crisis affecting the corporate world.</p> <p>PO5: Students will be able to deal with ethical dilemmas and value systems existing in the global corporate organisations and accept responsibilities by enforcing ethical code of conducts.</p> <p>PO6: By learning global environmental issues, students will show sensitivity towards sustainability and ecology in corporate organisations at an international level.</p>	

PO7: Students will develop the ability to learn constantly through-out their global careers and thereby contribute significantly towards social and technological changes.
 PO6: Learning environmental issues, students will show sensitivity towards sustainability and ecology in corporate organisations.
 PO7: Students will have the ability to keep updating technical knowledge and will be exposed to corporates through apprenticeship for a period of six months.

PROGRAMME SPECIFIC OUTCOMES

PS01: Understand internationally accepted financial accounting and reporting practices throughout the program.
 PSO2: Analyze and apply various fundamental knowledge of accounting, Taxation laws, Financial reporting techniques in corporates and other institutions.
 PSO3: In depth knowledge of business concepts like Risk Management, Corporate Governance, Business Ethics which is required to manage the organisations effectively.
 PSO4: Understand the applications of Management accounting, Auditing techniques, Cost Accounting techniques and Finance in business organisations.

Semester- I

Subject and code: INTERNATIONAL FINANCIAL ACCOUNTING G 320 DC1.1

Course Outcomes:

CO1: Explain the context and purpose of financial Reporting
 CO2: Define the qualitative characteristics of financial information
 CO3: Demonstrate the use of double-entry and accounting systems
 CO4: Record transactions and events
 CO5: Prepare a trial balance (including identifying and correcting errors)
 CO6: Prepare basic financial statements for incorporated and unincorporated entities.
 CO7: Prepare simple consolidated financial Statements
 CO8: Interpretation of financial statements

Subject and code: Organisational Behaviour - G 320 DC 2.1

Course Outcomes:

CO1: To understand the basic concept of organizational behavior
 CO2: To know the importance of change in the organization
 CO3: To know different types of leadership in the organization and leadership theories
 CO4: To provide knowledge in group behavior and the methods of handling informal groups
 CO5: To acquaint with the knowledge of motivation theories and importance of motivation management

Subject and code: Principles of Marketing - G 320 DC3.1

Course Outcomes:

CO1: Understand the basic concepts of marketing and asses the marketing environment.
 CO2: Analyze the consumer behaviour in the present scenario and marketing segmentation.
 CO3: Discover the new product development & identify the factors affecting the price

of a product in the present context.
 CO4: Judge the impact of promotional techniques on the customers & importance of channels of distribution.
 CO5: Outline the recent developments in the field of marketing.

Subject and code: Managerial Economics - G 320 OE1.1

Course Outcomes:

CO1: Describe the importance of managerial economics in decision making process.
 CO2. Learners would be able to apply the concepts and principles in their day to daylife.
 CO3. Analyze how economic agents make decisions and choices using theoretical knowledge & practical approach.

Subject and code: Accounting for Everyone - G310OE2.1 (Open Elective Course)

Course Outcomes:

CO1: Analyze various terms used in accounting;
 CO2. Make accounting entries and prepare cash book and other accounts necessary while running a business;
 CO3. Prepare accounting equation of various business transactions
 CO4: Analyze information from company's annual report;
 CO5: Comprehend the management reports of the company.

Subject and code: Financial Literacy - G310 OE3.1 (Open Elective Course)

Course Outcomes:

CO1. Describe the importance of financial literacy and list out the institutions providing financial services;
 CO2. Prepare financial plan and budget and manage personal finances;
 CO3. Open, avail, and manage/operate services offered by banks;
 CO4. Open, avail, and manage/operate services offered by post offices;
 CO5. Plan for life insurance and property insurance & select instrument for investment in shares

Semester- II

Subject and code: INTERNATIONAL MANAGEMENT ACCOUNTING - G 320 DC1.2

Course Outcomes:

CO1: Explain the nature, source and purpose of management information
 CO2: Explain and apply cost accounting techniques
 CO3: Prepare budgets for planning and control
 CO4: Compare actual costs with standard costs and analyze any variances
 CO5: Explain and apply performance measurements and monitor business performance.

Subject and code: Business Mathematics - G 320 DC2.2

Course Outcomes:

CO1: Understand the number system and indices applications in solving basic business problems.

CO2: Apply concept of commercial arithmetic concepts to solve business problems.
 CO3: Make use of theory of equation in solving the business problems in the present context.
 CO4: Understand and apply the concepts of Set Theory, Permutations & Combinations and Matrices solving business problems.
 CO5: Apply measurement of solids in solving simple business problems.

Subject and code: FINANCIAL REPORTING - G 320 DC3.2

Course Outcomes:

CO1: On successful completion of this paper candidates should be able to:
 CO2: Discuss and apply a conceptual and regulatory frameworks for financial reporting
 CO3: Account for transactions in accordance with International accounting standards
 CO4: Analyze and interpret financial statements.
 CO5: Prepare and present financial statements for single entities and business combinations in accordance with International accounting standards

Subject and code : PUBLIC FINANCE - G 320 OE1.2

Course Outcomes:

CO1: Identify the basis of Money and sources of Public Finance
 CO2: Identify the stages of business cycles and take appropriate decisions.

Subject and code : Financial Environment - G 320 OE 2.2

Course Outcomes:

CO1: Understand the fundamentals of Indian Economy and its significance.
 CO2: Evaluate the impact of monetary policy on the stakeholders of the Economy.
 CO3: Assess the impact of fiscal policy on the stakeholders of the Economy.
 CO4: Examine the status of inflation, unemployment and labour market in India
 CO5: Inference the financial sector reforms in India.

Subject and code : Investing in Stock Markets - G 320 OE 3.2 (Open Elective Course)

Course Outcomes:

CO1: Explain the basics of investing in the stock market, the investment environment as well as risk & return.
 CO2. Analyze Indian securities market;
 CO3. Examine EIC framework and conduct fundamental analysis;
 CO4. Perform technical analysis;
 CO5. Invest in mutual funds market.

Semester- III

Subject and code: AUDIT AND ASSURANCE - G320 DC1.3

Course Outcomes:

CO 1: To develop knowledge of auditing techniques
 CO2: To understand the process of carrying out the assurance engagement
 CO3: To be able to apply professional regulatory framework.

Subject and code: FINANCIAL MANAGEMENT – I - G320 DC2.3

Course Outcomes:
CO1: This paper aims at providing the students with the comprehensive understanding of the function of financial management in the context of a business organisation. CO2: The paper expects the students to understand different functions of a financial manager in a globalized environment. CO3: The paper helps the student to understand how well the working capital management can be done in a business. CO4: The paper helps the student to calculate and evaluate the investment appraisal proposal received by the business. CO5: The student will get a in-depth understanding of various special investment decision that a finance manager has to take.
Subject and code: PERFORMANCE MANAGEMENT - G320 DC3.3
Course Outcomes:
CO1: To develop knowledge and skills in the application of management accounting techniques CO2: To learn the approaches for planning, measuring, controlling, monitoring and evaluation of business performance CO3: To identify and apply budgeting techniques and methods for planning and control CO4: To learn different costing systems to manage the performance of the organisations.
Subject and code: GOVERNANCE, RISKS AND ETHICS (Open Elective Course)- G320 OE1.3
Course Outcomes:
CO1: Define governance and explain its function in the effective management and control of organizations and of the resources for which they are accountable. CO2: Evaluate the Professional Accountant's role in internal control, review and compliance. CO3: Explain the role of the accountant in identifying and assessing risk. CO4: Explain and evaluate the role of the accountant in controlling and mitigating risk. CO5: Demonstrate the application of professional values and judgment through an ethical framework that is in the best interests of society and the profession, in compliance with relevant professional codes, laws and regulations.
Subject and code: Advertising Skills - G320 OE2.3(Open Elective Course)
Course Outcomes:
CO1: Explain types of advertising media. CO2: Identify the factors that affect media selection. CO3: To learn evolve advertising strategy, formulate budget CO4: Understand ethical aspects in advertising CO5: Familiarize online portals in advertising
Subject and code: Entrepreneurial skills - G320 OE3.3 (Open Elective Course)
Course Outcomes:
CO1: Learn skills to be an effective and capable entrepreneur.

CO2: Comprehend the key factors influencing entrepreneurial possibilities.
CO3: Recognize and creatively think to design and innovate unique business opportunities.
CO4: Understand the skills and knowledge for running and managing a new business.

Semester- IV

Subject and code: Financial Management – II - G320 DC1.4

Course Outcomes:

CO1: This paper aims at providing the students with the comprehensive understanding of the function of financial management in the context of various sources of business finances
CO2: The paper aims to provide a deep understanding of the various capital structure theories and how to implement them.
CO3: The paper provides the introduction to various methods by which a business valuation takes place.
CO4: The paper provides various methods by which you can hedge the foreign exchange currency risk.
CO5: The paper provides various methods by which you can hedge the interest rate exposure risk.

Subject and code: Corporate Reporting – I - G320 DC2.4

Course Outcomes:

CO1: To underpin the expert knowledge and understanding of the corporate reporting practices in a globalised environment.
CO2: To understand fundamental ethical & professional principles related to corporate reporting.
CO3: To interpret financial statements for different stakeholders.

Subject and code: BUSINESS LAW - G320 DC3.4

Course Outcomes:

CO1: To familiarize the students to understand the concept of Business Law
CO2: To understand Rules and Regulations associated with it.
CO3: To study legal provisions and rules in business
CO4: To recognize and identify the extent to which law is important in business

Subject and code: BUSINESS ANALYSIS (OEC) - G 320 OE 1.4

Course Outcomes:

CO1: To apply relevant knowledge, skills, and exercise professional judgment in assessing strategic position
CO2: To determine strategic choice, and implement strategic action through beneficial business process and structural change;
CO3: To coordinate knowledge systems and information technology and by effectively managing processes, projects, and people within financial and other resource

constraints.

Subject and code: Business Ethics (Open Elective Course)
G 320 OE 2.4

Course Outcomes:

CO1: Understand the basics of ethics

CO2: Make a distinction between morality and ethics

CO3: Analyze the case studies and make interpretations

CO4: Prepare reports based on ethical code of conduct in an organization.

Subject and code: Corporate Governance (Open Elective Course)
G 320 OE 3.4

Course Outcomes:

CO1: Analyze fundamental theories of ethics

CO2: Make a distinction between morality and ethics

CO3: Analyze the case studies and make interpretations

CO4: Prepare reports based on ethical code of conduct in an organization.

Subject and code: International Trade (Open Elective Course)
G 320 OE 4.4

Course Outcomes:

CO1: Analysis of trade models in depth in order to discuss the benefits and consequences of international trade and globalization.

CO2: The course will slightly delve into international finance in order to discuss different exchange rate regimes, their effect on monetary/fiscal policy, and economic integration.

CO3: Understand the legal procedures involved in International Business.

CO4: Recognize the different types of economic integrations.

CO5: Understand and analyze the operations of MNCs through real case assessment.

CO6: Evaluate India's foreign trade status

Semester- V

Subject and code: ADVANCED FINANCIAL MANAGEMENT I - G 320 DC1.5

Course Outcomes:

CO1: Understand the role of a senior financial advisor in global environment against the backdrop of ethical framework and governance

CO2: Finance function in a multi-national organisation

CO3: Financial evaluation of mergers & acquisitions for the stakeholders, particularly the shareholders

C04: Financial evaluation of business reorganisation and financial reconstruction
Subject and code: INCOME TAX LAW AND PRACTICE-I - G 320 DC2.5
Course Outcomes:
CO 1: Develop working knowledge of taxation system in India.
CO 2: Understand basic concepts in tax and the various provisions of the Income Tax Act of 1961.
CO 3: Able to ascertain the status of residence
CO 4: Find out taxable income form salary, house property and business or profession.
Subject and code : Advanced Auditing and Assurance I - G 320 DC3.5
Course Outcomes:
CO1: Develop knowledge of advanced auditing techniques
CO2: Understand the role and process of auditors in managing audit
CO3: Able to examine the role of ethical practices in auditing practices.
CO4: Ability to plan and assess risk in audit
Subject and code: Elective – 1 Advanced Performance Management – G 320 DE1.5
Course Outcomes:
CO1: Use of strategic planning and control models in planning and monitoring business performance
CO2: Assessing key external influences on an organisation
CO3: Changes in business structure and performance management
CO4: Designing management information systems
Subject and code : Elective - 2 Corporate Reporting I - G 320 DE2.5
Course Outcomes:
CO1: To underpin the expert knowledge and understanding of the corporate reporting practices in a globalised environment.
CO2: To understand fundamental ethical & professional principles related to corporate reporting.
CO3: To interpret financial statements for different stakeholders
Subject and code: Business Taxation - G 320 VO1.5
Course Outcomes:
CO1: Comprehend the concepts of Goods and Services tax.
CO2: Understand the fundamentals of GST.
CO3: Analyse the GST Procedures in the Business.
CO4: Know the GST Assessment and its computation.
Subject and code: Employability Skills - G 710 SB1.5
Course Outcomes:
CO1: Develop systematic problem-solving abilities.
CO2: Enhance verbal and non-verbal reasoning skills.
CO3: Improve numerical and analytical abilities.

CO4: Enhance English language and communication skills.
Semester- VI
Subject and code: Advanced Financial Management - II - G 320 DC1.6
Course Outcomes:
CO1: Using advanced investment appraisal techniques& estimating cost of capital CO2: Financing investment including international investments CO3: Use advanced risk management techniques CO4: Ability to implement process of Mergers and acquisitions
Subject and code : INCOME TAX LAW AND PRACTICE-II - G 320 DC2.6
Course Outcomes:
CO 1: Gain knowledge of the provisions of Income Tax Act, 1961 relating to taxation capital gains and other incomes. CO 2: Understand various deductions available to individuals u/s 80. CO 3: Make assessment of income and tax of individuals, firms and companies.
Subject and code: Corporate Law and Governance - G 320 DC3.6
Course Outcomes:
CO1: Understand the concept of Corporate Law and kinds of companies CO2: Ability to apply legal provisions associated with the Companies Act 2013. CO3: Illustrate formation of a company within the legal framework CO4: Understand the practical application of laws in managing a company
Subject and code : Advanced Audit and Assurance II - G 320 DE1.6
Course Outcomes:
CO1: Ability develop knowledge of advanced auditing techniques. CO2: Understanding the role and process of auditors in managing audit. CO3: Examine the role of ethics in auditing practices. CO4: Planning and assessing risk in audit.
Subject and code: Corporate Reporting II - G 320 VO1.6
Course Outcomes:
CO1: Analysing and Reporting of financial performance CO2: Reporting Group financial statements including group cash flow statements and accounting for associates & joint arrangements CO3: Preparation of Accounting procedure for changes in group structures CO4: Reporting of Foreign transactions & entities
Subject and code: BUSINESS TAXATION II - G 320 DE2.6
Course Outcomes:
CO1: Comprehend the assessment of partnership Firms and determine the tax liability. CO2: Comprehend the assessment of corporate entities and determine the tax liability. CO3: Equip with understanding of intensive knowledge on analysis of all forms of ITR Forms along with the Overview ITR Forms and e-filing.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:**G 300 E B. Com (APPRENTICESHIP/
INTERNSHIP EMBEDDED)****PROGRAMME OUTCOMES**

- PO - 1: Outcome Based Learning: Imparting theoretical and practical knowledge (expressed in terms of knowledge, understanding skill, attitudes and values) to enable students to demonstrate workforce professional abilities for potential employment.
- PO - 2: Youth Participation in the Job Market: Enabling youth to fully participate in the job market and gain access to employment with necessary knowledge, competencies and attitude.
- PO - 3: Overcome Employment- Employability Gap: Competency demanded by the industry embedded in the curriculum so that employment - employability gap is overcome, as a result bridges disconnect between 'what is taught in the class and 'what is required by the society'.
- PO - 4: Industry – Academia Linkage: Providing institutional framework for industry – academia linkage to increase the employability of the students. Augment the employability of student through close link between education and industry/service sectors on a sustainable basis.
- PO - 5: Engage in Practical side of Learning: Student to actively engage with the practical side of their learning like problem-solving, creative thinking, digital skills, software skills, team work etc.
- PO - 6: Business Law and Ethics in Governance: Studying the legal provisions of Business Laws and understanding the relevance and issues of good governance and ethics in corporate.
- PO – 7: Effective Communication: Develop language and communication skills to be successful in personal and professional life.
- PO – 8: Sensitizing Indian Constitution, Environment and Society: Students will be sensitized on the Indian Constitution, environmental issues, gender equity and values to be imbibed in their life.

PROGRAMME SPECIFIC OUTCOMES

- PSO -1: Have clear understanding of the concepts of economics and business and knowledge of functional areas of Business
- PSO - 2: Prepare master data relating to business transactions using accounting software. They prepare and maintain the data relating to business transactions for audit purpose.
- PSO - 3: Generate financial statements independently using ERP software and able to analyze and interpret the financial statements
- PSO - 4: Acquire thorough knowledge of payroll and salary components, prepare payroll

master data using software and prepare statutory advice.

PSO -5: Able to assess independently tax liability of individuals, firms and corporate

PSO - 6: Acquire clear knowledge of GST, handle GST computation, compute assessable value of customs duty and file independently

PSO - 7: Operate business with thorough knowledge of the provisions of Contract Act, Companies Act and other Business Laws.

PSO - 8: Acquire knowledge in Corporate Governance and ethical issues in business operations

PSO – 9: Communicate effectively with the stakeholders of the business enterprise by acquiring skills in English, Hindi and State Languages.

PSO – 10: Create good citizens with values expected by the society, sensitive to the Indian Constitution, environment and gender issues.

Semester- I

Subject and code: INTRODUCTION TO ACCOUNTING - G 330 DC1.1

Course Outcomes:

CO1: Understand the basic concept, principles and process of Accounting

CO2: Acquire the basics of Business Excel and able to record the data in excel sheet

CO3: Able to pass accounting entries, prepare ledger and trial balance

CO 4: Record receipts and payments and analyze them for interpretations

Subject and code: Basics of Spreadsheet - G 330 DC2.1

Course Outcomes:

CO1: Understand the basic concept of a Spreadsheet.

CO2: To prepare a candidate for better data visualization skills using Spreadsheet tools.

CO3: To apply logical functions to data to produce better decisions using Spreadsheets.

CO4: Adapt the integration of spreadsheet applications and generate various reports

Subject and code: Purchase and Account Payables - G 330 DC3.1

Course Outcomes:

CO1: Acquire the knowledge of purchase process

CO2: Understand ERP software and record the purchase and payments in ERP software

CO3: Able to record purchase journal and record payments.

CO4: Able to perform banking process, letter of intimation, manual outgoing payment, and Automatic Payment Process (APP).

Subject and code: Sales and Account Receivables - G 330 DC4.1

Course Outcomes:

CO1: Understand the sales process and recording sales in the sales journal

CO2: Acquire the knowledge in sales documentation and authorization.

CO3: Able to create account receivables invoice

CO4: Acquire the skills in collection process, preparation of reports and reconciliation

Subject and code: Principles of Marketing G 330 DC5.1

Course Outcomes:

CO1: Understand the basic concepts of marketing and asses the marketing environment.

CO2: Analyze the consumer behaviour in the present scenario and marketing segmentation.

CO3: Discover the new product development & identify the factors affecting the price of a product in the present context.

CO4: Judge the impact of promotional techniques on the customers & importance of channels of distribution.

CO5: Outline the recent developments in the field of marketing

Subject and code: Production Management - G 330 DC6.1

Course Outcomes:

CO1.Understand the fundamental concepts of Enterprise Resource Planning (ERP) and its application in production management.

CO2.Analyze different production planning and scheduling techniques within an ERP framework.

CO3.Apply Materials Requirement Planning (MRP) principles to manage material flow and inventory levels using ERP tools.

CO4.Manage shop floor operations and integrate quality management practices using an ERP system.

CO5.Utilize ERP-generated data for performance analysis and implement continuous improvement strategies in production processes.

Subject and code: Managerial Economics - G 330 OE1.1

Course Outcomes:

CO1: 1. Describe the importance of managerial economics in decision making process.

CO2: Learners would be able to apply the concepts and principles in their day to daylife.

CO3: Analyze how economic agents make decisions and choices using theoretical knowledge & practical approach.

Subject and code: Accounting for Everyone - G 330 OE2.1

Course Outcomes:

CO1: Analyze various terms used in accounting;

CO2: Make accounting entries and prepare cash book and other accounts necessary while running a business;

CO3: Prepare accounting equation of various business transactions;

CO4: Analyze information from company's annual report;

CO5:Comprehend the management reports of the company.

Subject and code: Financial Literacy - G 330 OE3.1

Course Outcomes:

CO1. Describe the importance of financial literacy and list out the institutions providing financial services;

CO2: Prepare financial plan and budget and manage personal finances;

CO3: Open, avail, and manage/operate services offered by banks;

CO4: Open, avail, and manage/operate services offered by post offices;

CO5: Plan for life insurance and property insurance & select instrument for investment in shares.

Semester- II

Subject and code: UNDERSTANDING PAYROLL & SALARY - G330 DC1.2

Course Outcomes:

CO1: Know the organisation structure, recording and maintaining employee data sheet
CO2: Acquire clear knowledge of payroll and salary and their components
CO3: Skilled to prepare employee master data using ERP software.
CO4: Able to record entries in Salary Register

**Subject and code : SALES AND INVENTORY MANAGEMENT
G330 DC2.2**

Course Outcomes:

CO1: Understand the role of ERP Software in Inventory Management
CO2: Know record keeping of inventory, preparation of chart of accounts and inventory Master Data Sheet.
CO3: Able to record inventory and prepare master data sheet of inventory
CO4: They can maintain inventory records and documents for audit purpose

**Subject and code : PURCHASES ASSETS & ACCOUNTS PAYABLES
G330 DC3.2**

Course Outcomes:

CO1: Understand the process in the purchase of assets and invoice preparation
CO2: Acquaint with the knowledge in assets retirement and invoice preparation
CO3: Prepare independently master data relating to assets purchase and sales using accounting Software
CO4: Able to prepare and maintain the data relating to depreciation for audit

Subject and code : ERP And Banking Operations G 330 DC4.2

Course Outcomes:

CO1: Implementing ERP enhances operational efficiency by automating processes and reducing manual effort.
CO2: ERP integration ensures data consistency and reliability across banking functions, improving decision-making and regulatory compliance.
CO3: By optimizing resource allocation and streamlining operations, ERP implementation lowers operational costs while maintaining service quality.
CO4: Integrating ERP enables banks to deliver personalized services and faster response times, enhancing overall customer satisfaction and loyalty..

**Subject and code: BANKING, FINANCIAL SERVICES AND INSURANCE -
G 330 DC5.2**

Course Outcomes:

CO1: Students will have clear understanding of the concepts and operations of banks, financial services and insurance companies
CO2: Get knowledge in Regulatory framework of Banks and Insurance companies
CO3: Understand the various banking and insurance products and financial services offered and their implications.

Subject and code: ADVANCED SPREAD SHEET - G 330 DC6.2

Course Outcomes:

CO1: Utilize advanced data analysis techniques, including pivot tables, conditional formatting, and charts, to interpret and visualize data effectively.

CO2: Create and manipulate complex formulas and functions to solve real-world business problems.

CO3: Manage large datasets efficiently through advanced filtering, sorting, and data validation techniques.

CO4: Automate tasks using macros and scripting, enhancing productivity and reducing manual effort.

CO5: Collaborate on spreadsheets using cloud-based platforms, manage version control, and implement data sharing settings.

CO6: Apply advanced functions for financial analysis, text manipulation, and data integration in business applications

Subject and code: PUBLIC FINANCE - G 330 OE1.2

Course Outcomes:

CO1: Identify the basis of Money and sources of Public Finance
 CO2: Identify the stages of business cycles and take appropriate decisions

Subject and code: Financial Environment - G 330 OE2.2

Course Outcomes:

CO1: Understand the fundamentals of Indian Economy and its significance.
 CO2: Evaluate the impact of monetary policy on the stakeholders of the Economy.
 CO3: Assess the impact of fiscal policy on the stakeholders of the Economy.
 CO4: Examine the status of inflation, unemployment and labour market in India
 CO5: Infer the financial sector reforms in India.

Subject and code: Investing in Stock Markets – G330 OF3.2

Course Outcomes:

CO1 Explain the basics of investing in the stock market, the investment environment as well as risk & return.
 CO2: Analyze Indian securities market;
 CO3: Examine EIC framework and conduct fundamental analysis;
 CO4: Perform technical analysis;
 CO5: Invest in mutual funds market.

Semester- III

Subject and code: Financial Accounting -Global Practices with ERP -I G330 DC1.3

Course Outcomes:

CO 1: Able to configure enterprise structure based on statutes in ERP
 CO 2: Able to set Accounting Global parameters in ERP system
 CO 3: Know how to work with Business transaction and reconciliations
 CO 4: To process banking operations from MNC's accounting environment
 CO 3: To know the changes in accounting regulations and adoption of IFRS

Subject and code: Business Statistics G330 DC2.3

Course Outcomes:

CO1: Identify a statistical method for solving practical problems.

CO2: Discuss critically the uses and limitation of statistical techniques.

CO3: Describe and discuss the key terminology, concepts, tools and techniques used in business statistical analysis.

CO4: Evaluate critically the underlying assumptions of analysis tools.

Subject and code: PAYROLL MANAGEMENT & SOFTWARE - G330 DC3.3

Course Outcomes:

CO 1: Students will be able to define payroll management

CO 2: Understand payroll work process and define HR Policies of the Organization.

CO 3: Students will be able to prepare payroll period and Salary Structure.

CO 4: Students will be able work on software relating to payroll accounting.

Subject and code : Cost Accounting -I - G330 DC4.3

Course Outcomes:

CO 1: Apply the knowledge of basic concepts of cost accounting.

CO 2: Execute the preparation of cost sheet.

CO 3: Understand the concept of material control

CO 4: Analyse overhead cost classifications and methods of absorption of overheads

CO 5: Identify the causes of disagreements in profits and reconcile the same.

Subject and code: Basics of Financial Management - G33DC 5.3

Course Outcomes:

CO1: Understand the role of financial managers effectively in an organization.

CO2: Apply the compounding & discounting techniques for time value of money.

CO3: Take investment decision with appropriate capital budgeting techniques for investment proposals.

CO4: Understand the factors influencing the capital structure of an organization.

CO5: Estimate the working capital requirement for the smooth running of the business

Subject and code: Corporate Financial Accounting –I - G33DC 6.3

Course Outcomes:

CO 1: Maintain the books of accounts and pass accounting entries of corporate entities.

CO 2: Prepare the annual accounts of companies as per the Companies Act 2013

CO 3: Independently value the goodwill and shares for the benefit of stakeholders of the corporate entities.

CO 4: Get an awareness of current issues of social accounting, environmental accounting, buy back of shares and Human Resource Accounting

Subject and code: Entrepreneurial skills G 330 OE 1.3

Course Outcomes:

CO1: Learn skills to be an effective and capable entrepreneur.
CO2: Comprehend the key factors influencing entrepreneurial possibilities.
CO3: Recognize and creatively think to design and innovate unique business opportunities.
CO4: Understand the skills and knowledge for running and managing a new business

Subject and code: Advertising Skills - G 330 OE 2.3

Course Outcomes:

CO1: Explain types of advertising media.
CO2: Identify the factors that affect media selection.
CO3: To learn evolve advertising strategy, formulate budget
CO4: Understand ethical aspects in advertising
CO5: Familiarize online portals in advertising

Subject and code: Modern Bank Management - G 330 OE 3.3

Course Outcomes:

CO 1: Have clear understanding of the concepts and operations of modern banks
CO 2: Get knowledge in functions of RBI and other banks.
CO 3: Understand various modern banking products and services offered.

Semester- IV

**Subject and code: Financial Accounting -Global practices with ERP –II
G330 DC1.4**

Course Outcomes:

CO1: Able to configure customer master data on ERP
CO 2: Able to set Accounting Global parameters in ERP system
CO3: Know how to work with Business transaction and reconciliation of sundry debtors base
CO4: To process banking operations from MNC's A/R environment
CO5: To know the interest calculation techniques

Subject and code: Business Mathematics - G330 DC2.4

Course Outcomes:

CO 1: Understand the number system and indices applications in solving basic business problems.
CO2: Apply concept of commercial arithmetic concepts to solve business problems.
CO3: Understand and apply the concepts of Set Theory, Permutations & Combinations

Subject and code: Business Regulatory Framework - G330 DC3.4

Course Outcomes:

CO1:Understand the concept of Business Regulatory Framework
CO2:Able to apply the Rules and Regulations associated with business
CO3:Ability to understand the legal provisions to enter into contract
CO4: Recognize and identify the extent to which law is important in business dealings.

Subject and code: Cost Accounting II - G330 DC 4.4

Course Outcomes:
CO1: Understand the concept of Job, Batch and Contract costing.
CO2: Apply the knowledge gained in the preparation of a budget and use budgets for performance evaluation after flexing the budget.
CO3: Interpret variable cost variances and fixed cost variances.
CO4: Explain the concept of cost audit and cost accounting records.
Subject and code : Cost Control Techniques –ERP – G330 DC 5.4
Course Outcomes:
CO1: Understand the basic concept of Costing Accounting
CO2: Acquire the basics of Cost Elements, Cost Centre
CO3: Able to pass accounting entries, prepare ledger and trial balance
CO4: Record independently receipts and payments and analyze the receipts and payments
Subject and code: Corporate Financial Accounting II - G330 DC 6.4
Course Outcomes:
Semester- V
Subject and code: Budgeting and Cash Flow Management - G330 DC 1.5
Course Outcomes:
CO1: Students will master the fundamentals of budgeting.
CO2: Proficiency will be demonstrated by students in configuring budgets using ERP systems.
CO3: students will proficiently prepare and analyze funds flow statements, discerning changes in working capital and funds from operations, and appreciating the benefits and utility of funds flow statements.
CO4: Students will develop competence in preparing cash flow statements, distinguishing between various cash flow classifications.
CO5. students will comprehend the key aspects of effective management reporting
Subject and code: Income Tax - G330 DC 2.5
Course Outcomes:
CO1: Develop working knowledge of taxation system in India
CO2: Understand the provisions for determining the residential status of an Individual.
CO3: Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.
CO4: Compute the income house property for different categories of house property business or profession
Subject and code: Business intelligence and analytics - G330 DC 3.5
Course Outcomes:

C01: Understand the basic concept of business intelligence
C02: Adapt the integration of ERP applications with BI tools
C03: To apply statistical tools on data to produce better decisions
C04: To prepare a candidate for better data visualization skills using BI tools

Subject and code: CORPORATE LAW AND GOVERNANCE- G330 DC 4.5

Course Outcomes:

C01: Understanding the legal framework, formation process, and documentation requirements of companies according to the Amended Companies Act, 2013.
C02: Gaining knowledge of members' and directors' rights, duties, and liabilities, alongside the appointment procedures and regulatory mandates for key management roles.
C03: Comprehending the procedures, prerequisites, and functions in conducting various company meetings by module completion.
C04: Developing familiarity with the roles, powers, and jurisdictions of regulatory bodies like the Registrar of Companies, Regional Director, NFRA, and specialized courts under the Companies Act, 2013.
C05: Acquiring an understanding of the procedures, reasons, and outcomes of company winding-up, encompassing both voluntary and tribunal-led processes, and the duties of company liquidators.

Subject and code: Advanced Financial Management - G330 DE 1.5

Course Outcomes:

C01: Understand and determine the overall cost of capital.
C02: Comprehend the different advanced capital budgeting techniques.
C03: Understand the importance of dividend decisions.
C04: Evaluate mergers and acquisition.
C05: Enable the ethical and governance issues in financial management.

Subject and code: Management Accounting - G330 DE 2.5

Course Outcomes:

C01: Demonstrate the significance of management accounting in decision making.
C02: Analyse and interpret the corporate financial statements by using various techniques.
C03: Compare the financial performance of corporates through ratio analysis.
C04: Understand the latest provisions in preparing cash flow statement.
C05: Comprehend the significance of management audit and examine the corporate reports of Management Review and Governance

Subject and code: GST-Law & Practice - G 330 VOC 1.5

Course Outcomes

C01: Comprehend the concepts of Goods and Services tax.
C02: Understand the fundamentals of GST.
C03: Analyse the GST Procedures in the Business.
C04: Know the GST Assessment and its computation.

Subject and code: Digital Marketing - G 330 VOC 2.5
Course Outcomes
<p>C01: Gain knowledge on Digital Marketing, Email marketing and Content marketing. C02: Understand Search Engine Optimization tools and techniques C03: Gain skills on creation of Google AdWords & Google AdSense C04: Gain knowledge on Social Media Marketing and Web Analytics. C05: Gain knowledge on YouTube Advertising & Conversions</p>
Subject and code: SKILL ENHANCEMENT COURSE
Course Outcomes
<p>C01: Develop systematic problem-solving abilities. C02: Enhance verbal and non-verbal reasoning skills. C03: Improve numerical and analytical abilities. C04: Enhance English language and communication skills.</p>
Semester- VI
INTERNSHIP:
<ul style="list-style-type: none"> • Exposure to the industrial/business world to get practical experience in the day to day affairs of the business enterprises • Practical application of the theoretical knowledge of the students in the field of accounting, costing, taxation, human resource, finance, marketing and management. • Studying the office environment, experiencing the day to day business decisions, superior-subordinate relationship and experiencing the work life • Learning entrepreneurial skills and understanding issues and challenges of entrepreneurship

Department Name:	G 400 A B.B.A.
PROGRAMME OUTCOMES	
<p>PO1: Understand concepts and principles of management/business; identify the opportunities in the corporate environment and manage the challenges. PO2: Demonstrate the knowledge of management science to solve complex corporate problems using limited resources. Display enhanced personality and soft skills. PO3: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. PO4: Demonstrate entrepreneurial competencies. PO5: Exhibit managerial skills in the areas of marketing, finance, HR, etc. PO6: Identify business opportunities, design and implement innovations in workspace. PO7: Possess a sturdy foundation for higher education.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO1: Acquire practical learning through summer internship, industrial visit and</p>	

Business Plan etc.

PSO2: Demonstrate analytical and problem-solving skills through specialization in Finance, Human Recourse, and Marketing to solve the business issues.

PSO3: Understand and develop the new dimensions of knowledge through open electives to cater the need of the industry.

PSO4: Comprehend the core concepts, methods and practices in management.

PSO5: Venture into his/her own business or excel in executive roles in private/government sector.

PSO6: Demonstrate the ability to create business plans.

PSO7: Develop an understanding of business that reflects the moral responsibility of business to all relevant stakeholders and the natural environment.

PSO8: Matured Individuals and responsible Citizens to the country.

PSO9: Demonstrate Ability to work in Groups.

Semester- I

Subject and code : Management Principles & Practice - 401 DC1.1

Course Outcomes:

CO1: The ability to understand concepts of business management, principles and function of management.

CO2: The ability to explain the process of planning and decision making.

CO3: The ability to create organization structures based on authority, task and responsibilities.

CO4: The ability to explain the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.

CO5: The ability to understand the requirement of good control system and control techniques.

Subject and code: Fundamentals of Business Accounting - G 401 DC2.1

Course Outcomes:

CO1: Understand the framework of accounting as well accounting standards.

CO2: Ability to analyse journal entry and Prepare Ledger account.

CO3: Ability to prepare subsidiary books and bank reconciliation statement.

CO4: Ability to prepare Trial Balance and final accounts of proprietary concern

CO5: Understand the basic framework of tally and construct final accounts through application of tally.

Subject and code: Marketing Management- G 401 DC 3.1

Course Outcomes:

CO1: Understand the concepts and functions of marketing.

CO2: Analyse marketing environment impacting the business.

CO3: Segment the market and understand the consumer behaviour

CO4: Describe the 4 Ps of marketing and also strategize marketing mix

CO5: Describe 7 Ps of service marketing mix.

Subject and code: BASIC ECONOMICS (OE) - G 401 OE 1.1

Course Outcomes:

CO1. Explain how consumers make rational choices using the concept of utility

CO2: To understand the concept of consumer surplus.
CO3: Analyse the factors that affect market demand and market supply and illustrate their interaction for achieving equilibrium in price and quantity.
CO4: Analyse how producer applies the marginal decision rule to maximize the profit in producing goods or services..

Subject and code: Business Organization - G 401 OE 2.1

Course Outcomes:

CO1: An understanding of the nature, objectives and social responsibilities of business
CO2: An ability to describe the different forms of organisations
CO3: An understanding of the basic concepts of management
CO4: An understanding of functions of management.
CO5: An understanding of different types of business combinations.

Subject and code: Business Economics (OEC) - G 401 OE 3.1

Course Outcomes

CO1: To acquaint the students with basic concept and objectives of business economics.
CO2: It enables the students to analyse the consumer behaviour in different business situations.
CO3: To stimulate the student's interest by showing the relievable and use of various economic theories.
CO4: To apply economic reasoning to problems of business.
CO5: To know about the economics concept of business

**Subject and code: Office Organization and Management (OEC)
G 401 OE 4.1**

Course Outcomes:

CO1. An understanding of basic knowledge of office organisation and management
CO2: Demonstrate skills in effective office organisation
CO3: Ability to maintain office records
CO4: Ability to maintain digital record.
CO5: Understanding of different types of organisation structures and responsibilities as future office managers.

Semester- II

Subject and code: Corporate Accounting and Reporting - G 401 DC 2.2

Course Outcomes:

CO1: The ability to understand the process of public issue of shares, alteration of shares and accounting for the same
CO2: The ability to prepare final accounts of joint stock companies.
CO3: The ability to understand different ways of valuing corporate shares and goodwill.
CO4: The ability to prepare and evaluate vertical and horizontal analysis of financial statements and the skill of preparing financial reports,
CO5: The ability to understand company's annual reports.

Subject and code: Human Resource Management - G401 DC 1.2

Course Outcomes:

CO1: To describe the role and responsibility of Human resource management functions on business and also to understand the recent trends in HR practices.

CO2: To understand the concepts such as HRP, Recruitment and Selection process HR Demand Forecasting, HR supply forecasting, Job Analysis, Specification, Job Enlargement, Job Rotation, Job Enrichment, Psychometric tests for Selection.

CO3: To infuse the concept of induction, training and compensation aspects.

CO4: To explain the concepts of performance appraisal and its process. Also explain the concepts of Right Sizing of Work Force, Need for Right Sizing.

CO5: To demonstrate Employee Engagement and Psychological Contract, Employee Engagement (EE): Drivers of Engagement -Measurement of EE, Benefits of EE.

Subject and code : Business Mathematics - G 401 DC 3.2

Course Outcomes:

CO1: The Understanding of the basic concepts of business math and apply them to create solve and interpret application problems in business

CO2: Ability to solve problems on various types of equation.

CO3: Ability to solve problems on Matrices and execute the laws of indices, law of logarithm and evaluate them.

CO4: Ability to apply the concept of simple interest and compound interest bills discounted etc. and apply them in day-to-day life.

CO5: Ability to solve problems on Arithmetic progression, Geometric progression and construct logical application of these concepts.

Subject and code : BUSINESS ENVIRONMENT - G401 DC 4.2

Course Outcomes:

CO1: An Understanding of components of business environment.

CO2: Ability to analyse the environmental factors influencing business organisation.

CO3: Ability to demonstrate Competitive structure analysis for select industry.

CO4: Ability to explain the impact of fiscal policy and monetary policy on business.

CO5: Ability to analyse the impact of economic environmental factors of business.

Subject and code : MANAGERIAL ECONOMICS (OE) - G401 OE 1.2

Course Outcomes:

CO1: To acquaint with the basic knowledge on the concept of managerial economics.

CO2: To understand different market structures within which a firm operates.

CO3: To enable the students to gain knowledge about the various tools, techniques and concepts of managerial economics.

CO4: To understand the process of decision making by the consumers and producers.

Subject and code : People Management- G 401 OE 2.2

Course Outcomes:

CO1: Ability to examine the difference between People Management with Human resource Management

CO2. Ability to explain the need for and importance of People Management.

CO3. Ability to explain role of manager in different stages of performance management process

CO4. Ability to list modern methods of performance and task assessment.
CO5. Ability to analyse the factors influencing the work life balance of an working individual.

Subject and code : RETAIL MANAGEMENT- G401 OE 3.2

Course Outcomes:

CO1. An understanding of the types and forms of Retail business, Analysis of Retail life cycle. Also help understand the factors influencing present Indian retail scenario.
CO2: Ability to examine Consumer Behaviour in various environments and its implication on retailing.
CO3: Ability to analyse various Retail operations and evaluate them, also understand the concepts of Market area analysis, Trade area analysis, Rating Plan method and Site evaluation.
CO4: Ability to analyse various marketing mix elements in retail operations including Supply channel – SCM principles – Retail logistics – computerized replenishment system – corporate replenishment policies
CO5: Understand the workings of Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – Customer database management system.

Semester- III

Subject and code: COST ACCOUNTING - G 401. DC 1.3

Course Outcomes:

CO1: Understand the elements of costing and preparation of cost sheet.
CO2: The ability to prepare material requisitions and management of store.
CO3: The ability to compare and contrast labour /employee cost techniques.
CO4: Ability to differentiate kinds of overhead costing.
CO5: Ability to reconcile the cost.

Subject and code: ORGANIZATIONAL BEHAVIOR - G 401. DC 2.3

Course Outcomes:

CO1: To recall role of OB in business organization.
CO2: Able to understand group dynamics in an organization.
CO3: Able to understand the change management.
CO4: Able to construct the process of organizational development.
CO5: Ability to understand the kinds of Interventions in OB.

Subject and code: Statistics for Business Decisions - G 401 OE 3.3

Course Outcomes:

CO 1: Define social media marketing goal setting for successful online campaigns.
CO2: Analyze the effective social media marketing strategies for various types of industries and businesses.
CO3: Design social media content and create strategies to optimize the content's reach to

the target audience.

CO4: Appraise the reach and track progress in achieving social media objectives with a variety of measurement tools and metrics.

CO5: Design a suitable social media campaign for the business goals.

Subject and code: MONEY AND PUBLIC FINANCE (OE) - G401 OE 1.3

Course Outcomes:

CO1: Understand the meaning of public finance or government finance; its nature, subject matter, explain the differences between public finance and private finance and differentiate between the public and private goods

CO2: Classify the public revenue and its various sources; revenue receipts and non-revenue receipts, understand the tax and no-tax revenues, the causes of increasing public expenditure in the modern economies

CO3: Explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy

CO4: Understand the various sources of government borrowing and the reasons behind the growing public debt, describe how the debt is repaid, the role of public debt in developing countries.

Subject and code: Social Media Marketing (OEC) - G401 OE 2.3

Course Outcomes:

CO1: Define social media marketing goal setting for successful online campaigns.

CO2: Analyze the effective social media marketing strategies for various types of industries and businesses.

CO3: Design social media content and create strategies to optimize the content's reach to the target audience.

CO4: Appraise the reach and track progress in achieving social media objectives with a variety of measurement tools and metrics.

CO4: Design a suitable social media campaign for the business goals.

Subject and code: Rural Marketing (OEC) - G 401 OE 3.3

Course Outcomes:

CO1: Describe the importance and application of various concepts of rural marketing.

CO2: demonstrate the appropriate selection of the segmentation, targeting and positioning strategies along with the environmental factors that influence rural consumers' buying behavior.

CO3: Design a Pricing Strategy that suits the characteristics of rural products and the stage in the product life cycle.

CO4: Formulate the appropriate marketing communication and rural distribution channel plans to promote and deliver the rural products.

CO5: Appraise the recent trends in Rural marketing and the application of digital technology in rural marketing.

Semester- IV

Subject and code: MANAGEMENT ACCOUNTING - G 401 DC 1.4

Course Outcomes:

CO1: Able to understand the concept of Management Accounting.

CO2: To Understand and recall ratios and apply the same on given case.

CO3: To construct cash flow statement.

CO4: Should be able to apply Marginal cost ratios to make business decisions.

CO5: Student should be able to analyze business problems through applications.

Subject and code: Business Analytics - G 401 DC 2.4

Course Outcomes:

CO1: Able to understand Data Types and storage of Data.

CO2: To understand types of analytics and data models.

CO3: To demonstrate visualization of data.

CO4: To recall the data mining and processing of data.

CO5: Able to understand concepts of different analytics model.

Subject and code: Financial Markets & Services - G 401 DC 3.4

Course Outcomes:

CO1: To able to recall concepts of financial system.

CO2: Able to differentiate the roles of financial institutions.

CO3: Able understand concept of financial services.

CO4: To understand the trading process of Instruments.

CO5: Able to Summarize the concept of stock market.

Subject and code: FINANCIAL MANAGEMENT - G 401 DC 4.4

Course Outcomes:

CO1: To identify the goals of financial management.

CO2: To appraise the concepts of time value of money.

CO3: To understand the different models of dividend policy.

CO4: Able to analyze the business problem related to investments.

CO5: Able to appraise the working capital requirements in an organization.

Semester- V

**Subject and code: PRODUCTION AND OPERATIONS MANAGEMENT
G 401 DC1.5**

Course Outcomes:

CO1: Understand Manufacturing technology integration in smart production

CO2: Understand the various production and operations design decisions and how they

relate to the overall strategies of organizations.

CO3: Understand the importance of product and service design decisions and its impact other design decisions and operations.

CO4: Obtain an understanding of quality management practice in organizations and how total quality management and six-sigma facilitate organizational effectiveness.

CO5: Understand the roles of inventories and basics of managing inventories in various demand settings.

Subject and code: INCOME TAX – I - G 401 DC2.5

Course Outcomes:

CO1: Comprehend the procedure for computation of Total Income and tax liability of an individual.

CO2: Understand the provisions for determining the residential status of an Individual.

CO3: Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.

CO4: Compute the income house property for different categories of house property.

CO5: Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Subject and code: Banking Law and Practice - G 401 DC3.5

Course Outcomes:

CO1: Understand the legal aspects of banker and customer relationship.

CO2: Open the different types of accounts.

CO3: Describe the various operations of banks.

CO4: Understand the different types of crossing of cheques and endorsement.

CO5: Understanding of different types of E-payments..

Subject and code: ADVANCED CORPORATE FINANCIAL
MANAGEMENT - G 401 DE1a.5

Course Outcomes:

CO1: Understand and determine the overall cost of capital.

CO2: Comprehend the different advanced capital budgeting techniques.

CO3: Understand the importance of dividend decisions.

CO4: Evaluate mergers and acquisition.

CO5: Understand the importance of credit/ receivable management in making credit decisions.

Subject and code: CONSUMER BEHAVIOUR - G 401 DE1b.5

Course Outcomes:

CO1: Identify the major influences in consumer behaviour.

CO2: Distinguish between different consumer behaviour influences and their relationships.

CO3: Establish the relevance of consumer behaviour theories and concepts to marketing decisions.

CO4: Implement appropriate combinations of theories and concepts.

CO5: Recognise social and ethical implications of marketing actions on consumer behaviour.

CO6: Use most appropriate techniques to apply market solutions.

Subject and code: COMPENSATION AND PERFORMANCE - G 401 DE1c.5

Course Outcomes:

CO1: Understand the concepts of Compensation management.

CO2: Describe job evaluation and its methods.

CO3: Evaluate the different methods of wages.

CO4: Describe performance management and methods of performance management.

CO5: Preparation of Payroll.

Subject and code: FINANCIAL ANALYTICS - G 401 DE2a.5

Course Outcomes:

CO1: Analyze and model financial data.

CO2: Access the different open-source domains.

CO3: Evaluate and build model on time series data.

CO4: Use the most powerful and sophisticated routines in Python for data analysis.

CO5: Execute the statistical methods using python..

**Subject and code: FUNDAMENTALS OF RETAIL MANAGEMENT
G 401 DE2b.5**

Course Outcomes:

CO1: Clarify the concept and related terms in retailing.

CO2: Comprehend the ways retailers use marketing tools and techniques to interact with their customers.

CO3: Understand various formats of retail in the industry.

CO4: Recognize and understand the operations-oriented policies, methods, and procedures used by successful retailers in today's global economy.

**Subject and code: FREIGHT TRANSPORT MANAGEMENT -
G 401 DE2c.5**

Course Outcomes:

CO1: Understand the different types of transport.

CO2: Understand the Transport Economics.

CO4: Understand the transport administration.

CO5: Understand the terms consolidation, and documentations for Export and Import.

CO6: Understand the concept of pricing.

Subject and code: Digital Marketing - G 401 VO1.5

Course Outcomes:

CO1: Understand the different types of transport.
 CO2: Understand the Transport Economics.
 CO4: Understand the transport administration.
 CO5: Understand the terms consolidation, and documentations for Export and Import.
 CO6: Understand the concept of pricing.

Subject and code: INFORMATION TECHNOLOGY FOR BUSINESS - G 401 VO2.5

Course Outcomes:

CO1: Understand the fundamentals of information technology
 CO2: Understand how businesses use information technology
 CO3: Learn core concepts of computing and modern systems
 CO4: Understand modern software programs and packages for Business.
 CO5: Applications of Excel and SQL.

Semester- VI

Subject and code: BUSINESS LAW - G 401 DC1.6

Course Outcomes:

CO1: Comprehend the laws relating to Contracts and its application in business activities.
 CO2: Comprehend the rules for Sale of Goods and rights and duties of a buyer and a Seller.
 CO3: Understand the significance of Consumer Protection Act and its features
 CO4: Understand the need for Environment Protection.

Subject and code: INCOME TAX – II - G 401 DC 2.6

Course Outcomes:

CO1: Understand the procedure for computation of income from business and other Profession.
 CO2: Provisions for determining the capital gains.
 CO3: Compute the income from other sources.
 CO4: Demonstrate the computation of total income of an Individual.
 CO5: Comprehend the assessment procedure and to know the power of income tax authorities.

Subject and code: INTERNATIONAL BUSINESS - G 401 DC 3.6

Course Outcomes:

CO1: Understand the concept of International Business.
 CO2: Differentiate the Internal and External International Business Environment.
 CO3: Understand the difference MNC and TNC
 CO4: Understand the role of International Organizations in International Business.
 CO5: Understand International Operations Management..

Subject and code: SECURITY ANALYSIS AND PORTFOLIO - G 401 DE1a.6

Course Outcomes:

CO1: Understand the concept of basics of investment.
CO2: Evaluate the different types of alternatives.
CO3: Evaluate the portfolio and portfolio management.
CO4: Understand the concept of Bonds and mutual funds
CO5: Gain the knowledge of financial derivatives.

Subject and code: ADVERTISING AND MEDIA MANAGEMENT –

G 401 DE1b.6

Course Outcomes:

CO1: Understand the nature, role, and importance of IMC in marketing strategy
CO2: Understand effective design and implementation of advertising strategies
CO3: Present a general understanding of content, structure, and appeal of advertisements
CO4: Understand ethical challenges related to responsible management of advertising and brand strategy.
CO5: Evaluate the effectiveness of advertising and agencies role.

Subject and code: Cultural Diversity at Work Place - G 401 DE1c.6

Course Outcomes:

CO1: Understand, interpret question reflect upon and engage with the notion of “diversity”.
CO2: Recall the cultural diversity at work place in an organization.
CO3: Support the business case for workforce diversity and inclusion.
CO4: Identify diversity and work respecting cross cultural environment.
CO5: Assess contemporary organizational strategies for managing workforce diversity and inclusion.

Subject and code: MARKETING ANALYTICS - G 401 DE2a.6

Course Outcomes:

CO1: Understand the importance of marketing analytics for forward looking and systematic allocation of marketing resources
CO2: Apply marketing analytics to develop predictive marketing dashboard for organization
CO3: Analyse data and develop insights to address strategic marketing challenges
CO4: Execute the models on Predictions and Classifications on R Software. Know the applications of analytics in marketing.

Subject and code: RETAIL OPERATIONS MANAGEMENT - G 401 DE2b.6

Course Outcomes:

CO1: Compare various retail formats and technological advancements for setting up appropriate retail business.

CO2: Identify the competitive strategies for retail business decisions.
 CO3: Examine the site location and operational efficiency for marketing decisions.
 CO4: Analyse the effectiveness of merchandising and pricing strategies.
 CO5: Assess store layout and planogram for retail business.

Subject and code: SOURCING FOR LOGISTICS AND SUPPLY CHAIN MANAGEMENT - G 401 DE2c.6

Course Outcomes:

CO1: Understand the role of sourcing in logistics and supply chain management, and its impact on overall business performance.
 CO2: Analyze and evaluate sourcing strategies and decisions, including make-or- buy, insourcing vs. outsourcing, and supplier selection criteria.
 CO3: Develop effective supplier relationship management skills, including negotiation, communication, and collaboration.
 CO4: Apply sourcing best practices, including risk management, sustainability, and ethical sourcing.
 CO5: Evaluate the impact of technology and innovation on sourcing, and apply relevant tools and techniques to optimize sourcing processes and outcomes..

Subject and code: GOODS AND SERVICES TAX - G 401 VO1.6

Course Outcomes:

CO1: Understand the basics of taxation, including the meaning and types of taxes, and the differences between direct and indirect taxation.
 CO2: Analyze the history of indirect taxation in India and the structure of the Indian taxation system.
 CO3: Understand the framework and definitions of GST, including the constitutional framework, CGST, SGST, IGST, and exemptions from GST.
 CO4: Understand the time, place, and value of supply under GST, and apply this knowledge to calculate the value of supply and determine GST liability.
 CO5: Understand input tax credit under GST, including its meaning and process for availing it, and apply this knowledge to calculate net GST liability.

Subject and code: Enterprise Resource Planning - G 401 VO2.6

Course Outcomes:

CO1: Understand the business process of an enterprise to grasp the activities of ERP project management cycle to understand the emerging trends in ERP developments.
 CO2: Integrate and automate the business processes and shares information enterprise-wide.
 CO3: Explore the significance of ERP to provide a solution for better project management.
 CO4: Enable the students to understand the various process involved in implementing ERP in a variety of business environment
 CO4: Understand the issues involved in design and implementation of ERP systems

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social

skills. ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 400 C B.B.A. (Professional)
-------------------------	--------------------------------------

PROGRAMME OUTCOMES

- PO1: Understand concepts and principles of management/business; identify the opportunities in the corporate environment and manage the challenges.
 PO2: Demonstrate the knowledge of management science to solve complex corporate problems using limited resources. Display enhanced personality and soft skills.
 PO3: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
 PO4: Demonstrate entrepreneurial competencies.
 PO5: Exhibit managerial skills in the areas of marketing, finance, HR, etc.
 PO6: Identify business opportunities, design and implement innovations in workspace.
 PO7: Possess a sturdy foundation for higher education.

PROGRAMME SPECIFIC OUTCOMES

- PSO1: Acquire practical learning through summer internship, industrial visit and Business Plan etc.
 PSO2: Demonstrate analytical and problem-solving skills through specialization in Finance, Human Recourse, and Marketing to solve the business issues.
 PSO3: Understand and develop the new dimensions of knowledge through open electives to cater the need of the industry.
 PSO4: Comprehend the core concepts, methods and practices in management.
 PSO5: Venture into his/her own business or excel in executive roles in private/government sector.
 PSO6: Demonstrate the ability to create business plans.
 PSO7: Develop an understanding of business that reflects the moral responsibility of business to all relevant stakeholders and the natural environment.
 PSO8: Matured Individuals and responsible Citizens to the country.
 PSO9: Demonstrate Ability to work in Groups.

Semester- I

Subject and code : Management Principles & Practice - 401 DC1.1

Course Outcomes:

- CO1: The ability to understand concepts of business management, principles and function of management.
 CO2: The ability to explain the process of planning and decision making.
 CO3: The ability to create organization structures based on authority, task and responsibilities.
 CO4: The ability to explain the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.
 CO5: The ability to understand the requirement of good control system and control

techniques.

Subject and code: Fundamentals of Business Accounting - G 401 DC2.1

Course Outcomes:

CO1: Understand the framework of accounting as well accounting standards.
CO2: Ability to analyse journal entry and Prepare Ledger account.
CO3: Ability to prepare subsidiary books and bank reconciliation statement.
CO4: Ability to prepare Trial Balance and final accounts of proprietary concern
CO5: Understand the basic framework of tally and construct final accounts through application of tally.

Subject and code: Marketing Management- G 401 DC 3.1

Course Outcomes:

CO1: Understand the concepts and functions of marketing.
CO2: Analyse marketing environment impacting the business.
CO3: Segment the market and understand the consumer behaviour
CO4: Describe the 4 Ps of marketing and also strategize marketing mix
CO5: Describe 7 Ps of service marketing mix.

Subject and code: BASIC ECONOMICS (OE) - G 401 OE 1.1

Course Outcomes:

CO1. Explain how consumers make rational choices using the concept of utility
CO2: To understand the concept of consumer surplus.
CO3: Analyse the factors that affect market demand and market supply and illustrate their interaction for achieving equilibrium in price and quantity.
CO4: Analyse how producer applies the marginal decision rule to maximize the profit in producing goods or services..

Subject and code: Business Organization - G 401 OE 2.1

Course Outcomes:

CO1: An understanding of the nature, objectives and social responsibilities of business
CO2: An ability to describe the different forms of organisations
CO3: An understanding of the basic concepts of management
CO4: An understanding of functions of management.
CO5: An understanding of different types of business combinations.

Subject and code: Business Economics (OEC) - G 401 OE 3.1

Course Outcomes

CO1: To acquaint the students with basic concept and objectives of business economics.
CO2: It enables the students to analyse the consumer behaviour in different business situations.
CO3: To stimulate the student's interest by showing the relievable and use of various economic theories.
CO4: To apply economic reasoning to problems of business.
CO5: To know about the economics concept of business

**Subject and code: Office Organization and Management (OEC)
G 401 OE 4.1**

Course Outcomes:

CO1. An understanding of basic knowledge of office organisation and management
CO2: Demonstrate skills in effective office organisation

CO3: Ability to maintain office records
CO4: Ability to maintain digital record.
CO5: Understanding of different types of organisation structures and responsibilities as future office managers.

Semester- II

Subject and code: Corporate Accounting and Reporting - G 401 DC 2.2

Course Outcomes:

CO1: The ability to understand the process of public issue of shares, alteration of shares and accounting for the same

CO2: The ability to prepare final accounts of joint stock companies.

CO3: The ability to understand different ways of valuing corporate shares and goodwill.

CO4: The ability to prepare and evaluate vertical and horizontal analysis of financial statements and the skill of preparing financial reports,

CO5: The ability to understand company's annual reports.

Subject and code: Human Resource Management - G401 DC 1.2

Course Outcomes:

CO1: To describe the role and responsibility of Human resource management functions on business and also to understand the recent trends in HR practices.

CO2: To understand the concepts such as HRP, Recruitment and Selection process HR Demand Forecasting, HR supply forecasting, Job Analysis, Specification, Job Enlargement, Job Rotation, Job Enrichment, Psychometric tests for Selection.

CO3: To infuse the concept of induction, training and compensation aspects.

CO4: To explain the concepts of performance appraisal and its process. Also explain the concepts of Right Sizing of Work Force, Need for Right Sizing.

CO5: To demonstrate Employee Engagement and Psychological Contract, Employee Engagement (EE): Drivers of Engagement -Measurement of EE, Benefits of EE.

Subject and code : Business Mathematics - G 401 DC 3.2

Course Outcomes:

CO1: The Understanding of the basic concepts of business math and apply them to create solve and interpret application problems in business

CO2: Ability to solve problems on various types of equation.

CO3: Ability to solve problems on Matrices and execute the laws of indices, law of logarithm and evaluate them.

CO4: Ability to apply the concept of simple interest and compound interest bills discounted etc. and apply them in day-to-day life.

CO5: Ability to solve problems on Arithmetic progression, Geometric progression and construct logical application of these concepts.

Subject and code : BUSINESS ENVIRONMENT - G401 DC 4.2

Course Outcomes:

CO1: An Understanding of components of business environment.
CO2: Ability to analyse the environmental factors influencing business organisation.
CO3: Ability to demonstrate Competitive structure analysis for select industry.
CO4: Ability to explain the impact of fiscal policy and monetary policy on business.
CO5: Ability to analyse the impact of economic environmental factors of business.

Subject and code : MANAGERIAL ECONOMICS (OE) - G401 OE 1.2

Course Outcomes:

CO1: To acquaint with the basic knowledge on the concept of managerial economics.
CO2: To understand different market structures within which a firm operates.
CO3: To enable the students to gain knowledge about the various tools, techniques and concepts of managerial economics.
CO4: To understand the process of decision making by the consumers and producers.

Subject and code : People Management- G 401 OE 2.2

Course Outcomes:

CO1: Ability to examine the difference between People Management with Human resource Management
CO2. Ability to explain the need for and importance of People Management.
CO3. Ability to explain role of manager in different stages of performance management process
CO4. Ability to list modern methods of performance and task assessment.
CO5. Ability to analyse the factors influencing the work life balance of an working individual.

Subject and code : RETAIL MANAGEMENT- G401 OE 3.2

Course Outcomes:

CO1. An understanding of the types and forms of Retail business, Analysis of Retail life cycle. Also help understand the factors influencing present Indian retail scenario.
CO2: Ability to examine Consumer Behaviour in various environments and its implication on retailing.
CO3: Ability to analyse various Retail operations and evaluate them, also understand the concepts of Market area analysis, Trade area analysis, Rating Plan method and Site evaluation.
CO4: Ability to analyse various marketing mix elements in retail operations including Supply channel – SCM principles – Retail logistics – computerized replenishment system – corporate replenishment policies
CO5: Understand the workings of Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – Customer database management system.

Semester- III

Subject and code: COST ACCOUNTING - G 401. DC 1.3

Course Outcomes:

CO1: Understand the elements of costing and preparation of cost sheet.
CO2: The ability to prepare material requisitions and management of store.
CO3: The ability to compare and contrast labour /employee cost techniques.
CO4: Ability to differentiate kinds of overhead costing.

CO5: Ability to reconcile the cost.

Subject and code: ORGANIZATIONAL BEHAVIOR - G 401. DC 2.3

Course Outcomes:

CO1: To recall role of OB in business organization.

CO2: Able to understand group dynamics in an organization.

CO3: Able to understand the change management.

CO4: Able to construct the process of organizational development.

CO5: Ability to understand the kinds of Interventions in OB.

Subject and code: Statistics for Business Decisions - G 401 OE 3.3

Course Outcomes:

CO 1: Define social media marketing goal setting for successful online campaigns.

CO2: Analyze the effective social media marketing strategies for various types of industries and businesses.

CO3: Design social media content and create strategies to optimize the content's reach to the target audience.

CO4: Appraise the reach and track progress in achieving social media objectives with a variety of measurement tools and metrics.

CO5: Design a suitable social media campaign for the business goals.

Subject and code: MONEY AND PUBLIC FINANCE (OE) - G401 OE 1.3

Course Outcomes:

CO1: Understand the meaning of public finance or government finance; its nature, subject matter, explain the differences between public finance and private finance and differentiate between the public and private goods

CO2: Classify the public revenue and its various sources; revenue receipts and non-revenue receipts, understand the tax and no-tax revenues, the causes of increasing public expenditure in the modern economies

CO3: Explain the varying effects of public expenditure on the economy and role of public expenditure in a developing economy

CO4: Understand the various sources of government borrowing and the reasons behind the growing public debt, describe how the debt is repaid, the role of public debt in developing countries.

Subject and code: Social Media Marketing (OEC) - G401 OE 2.3

Course Outcomes:

CO1: Define social media marketing goal setting for successful online campaigns.

CO2: Analyze the effective social media marketing strategies for various types of industries and businesses.

CO3: Design social media content and create strategies to optimize the content's reach to the target audience.

CO4: Appraise the reach and track progress in achieving social media objectives with a variety of measurement tools and metrics.

CO4: Design a suitable social media campaign for the business goals.

Subject and code: Rural Marketing (OEC) - G 401 OE 3.3

Course Outcomes:

CO1: Describe the importance and application of various concepts of rural marketing.

CO2: demonstrate the appropriate selection of the segmentation, targeting and positioning strategies along with the environmental factors that influence rural consumers' buying behavior.

CO3: Design a Pricing Strategy that suits the characteristics of rural products and the stage in the product life cycle.

CO4: Formulate the appropriate marketing communication and rural distribution channel plans to promote and deliver the rural products.

CO5: Appraise the recent trends in Rural marketing and the application of digital technology in rural marketing.

Semester- IV

Subject and code: MANAGEMENT ACCOUNTING - G 401 DC 1.4

Course Outcomes:

CO1: Able to understand the concept of Management Accounting.

CO2: To Understand and recall ratios and apply the same on given case.

CO3: To construct cash flow statement.

CO4: Should be able to apply Marginal cost ratios to make business decisions.

CO5: Student should be able to analyze business problems through applications.

Subject and code: Business Analytics - G 401 DC 2.4

Course Outcomes:

CO1: Able to understand Data Types and storage of Data.

CO2: To understand types of analytics and data models.

CO3: To demonstrate visualization of data.

CO4: To recall the data mining and processing of data.

CO5: Able to understand concepts of different analytics model.

Subject and code: Financial Markets & Services - G 401 DC 3.4

Course Outcomes:

CO1: To able to recall concepts of financial system.

CO2: Able to differentiate the roles of financial institutions.

CO3: Able understand concept of financial services.

CO4: To understand the trading process of Instruments.

CO5: Able to Summarize the concept of stock market.

Subject and code: FINANCIAL MANAGEMENT - G 401 DC 4.4

Course Outcomes:

CO1: To identify the goals of financial management.

CO2: To appraise the concepts of time value of money.

CO3: To understand the different models of dividend policy.

CO4: Able to analyze the business problem related to investments.

CO5: Able to appraise the working capital requirements in an organization.

Semester- V

**Subject and code: PRODUCTION AND OPERATIONS MANAGEMENT
G 401 DC1.5**

Course Outcomes:

CO1: Understand Manufacturing technology integration in smart production

CO2: Understand the various production and operations design decisions and how they relate to the overall strategies of organizations.

CO3: Understand the importance of product and service design decisions and its impact other design decisions and operations.

CO4: Obtain an understanding of quality management practice in organizations and how total quality management and six-sigma facilitate organizational effectiveness.

CO5: Understand the roles of inventories and basics of managing inventories in various demand settings.

Subject and code: INCOME TAX – I - G 401 DC2.5

Course Outcomes:

CO1: Comprehend the procedure for computation of Total Income and tax liability of an individual.

CO2: Understand the provisions for determining the residential status of an Individual.

CO3: Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.

CO4: Compute the income house property for different categories of house property.

CO5: Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Subject and code: Banking Law and Practice - G 401 DC3.5

Course Outcomes:

CO1: Understand the legal aspects of banker and customer relationship.

CO2: Open the different types of accounts.

CO3: Describe the various operations of banks.

CO4: Understand the different types of crossing of cheques and endorsement.

CO5: Understanding of different types of E-payments..

Subject and code: ADVANCED CORPORATE FINANCIAL

MANAGEMENT - G 401 DE1a.5**Course Outcomes:**

CO1: Understand and determine the overall cost of capital.
CO2: Comprehend the different advanced capital budgeting techniques.
CO3: Understand the importance of dividend decisions.
CO4: Evaluate mergers and acquisition.
CO5: Understand the importance of credit/ receivable management in making credit decisions.

Subject and code: CONSUMER BEHAVIOUR - G 401 DE1b.5**Course Outcomes:**

CO1: Identify the major influences in consumer behaviour.
CO2: Distinguish between different consumer behaviour influences and their relationships.
CO3: Establish the relevance of consumer behaviour theories and concepts to marketing decisions.
CO4: Implement appropriate combinations of theories and concepts.
CO5: Recognise social and ethical implications of marketing actions on consumer behaviour.
CO6: Use most appropriate techniques to apply market solutions.

Subject and code: COMPENSATION AND PERFORMANCE - G 401 DE1c.5**Course Outcomes:**

CO1: Understand the concepts of Compensation management.
CO2: Describe job evaluation and its methods.
CO3: Evaluate the different methods of wages.
CO4: Describe performance management and methods of performance management.
CO5: Preparation of Payroll.

Subject and code: FINANCIAL ANALYTICS - G 401 DE2a.5**Course Outcomes:**

CO1: Analyze and model financial data.
CO2: Access the different open-source domains.
CO3: Evaluate and build model on time series data.
CO4: Use the most powerful and sophisticated routines in Python for data analysis.
CO5: Execute the statistical methods using python..

**Subject and code: FUNDAMENTALS OF RETAIL MANAGEMENT
G 401 DE2b.5****Course Outcomes:**

CO1: Clarify the concept and related terms in retailing.
CO2: Comprehend the ways retailers use marketing tools and techniques to interact with their customers.

CO3: Understand various formats of retail in the industry.

CO4: Recognize and understand the operations-oriented policies, methods, and procedures used by successful retailers in today's global economy.

Subject and code: FREIGHT TRANSPORT MANAGEMENT - G 401 DE2c.5

Course Outcomes:

CO1: Understand the different types of transport.

CO2: Understand the Transport Economics.

CO4: Understand the transport administration.

CO5: Understand the terms consolidation, and documentations for Export and Import.

CO6: Understand the concept of pricing.

Subject and code: Digital Marketing - G 401 VO1.5

Course Outcomes:

CO1: Understand the different types of transport.

CO2: Understand the Transport Economics.

CO4: Understand the transport administration.

CO5: Understand the terms consolidation, and documentations for Export and Import.

CO6: Understand the concept of pricing.

Subject and code: INFORMATION TECHNOLOGY FOR BUSINESS - G 401 VO2.5

Course Outcomes:

CO1: Understand the fundamentals of information technology

CO2: Understand how businesses use information technology

CO3: Learn core concepts of computing and modern systems

CO4: Understand modern software programs and packages for Business.

CO5: Applications of Excel and SQL.

Semester- VI

Subject and code: BUSINESS LAW - G 401 DC1.6

Course Outcomes:

CO1: Comprehend the laws relating to Contracts and its application in business activities.

CO2: Comprehend the rules for Sale of Goods and rights and duties of a buyer and a Seller.

CO3: Understand the significance of Consumer Protection Act and its features

CO4: Understand the need for Environment Protection.

Subject and code: INCOME TAX – II - G 401 DC 2.6

Course Outcomes:

CO1: Understand the procedure for computation of income from business and other Profession.
CO2: Provisions for determining the capital gains.
CO3: Compute the income from other sources.
CO4: Demonstrate the computation of total income of an Individual.
CO5: Comprehend the assessment procedure and to know the power of income tax authorities.

Subject and code: INTERNATIONAL BUSINESS - G 401 DC 3.6

Course Outcomes:

CO1: Understand the concept of International Business.
CO2: Differentiate the Internal and External International Business Environment.
CO3: Understand the difference MNC and TNC
CO4: Understand the role of International Organizations in International Business.
CO5: Understand International Operations Management..

Subject and code: SECURITY ANALYSIS AND PORTFOLIO - G 401 DE1a.6

Course Outcomes:

CO1: Understand the concept of basics of investment.
CO2: Evaluate the different types of alternatives.
CO3: Evaluate the portfolio and portfolio management.
CO4: Understand the concept of Bonds and mutual funds
CO5: Gain the knowledge of financial derivatives.

Subject and code: ADVERTISING AND MEDIA MANAGEMENT –
G 401 DE1b.6

Course Outcomes:

CO1: Understand the nature, role, and importance of IMC in marketing strategy
CO2: Understand effective design and implementation of advertising strategies
CO3: Present a general understanding of content, structure, and appeal of advertisements
CO4: Understand ethical challenges related to responsible management of advertising and brand strategy.
CO5: Evaluate the effectiveness of advertising and agencies role.

Subject and code: Cultural Diversity at Work Place - G 401 DE1c.6

Course Outcomes:

CO1: Understand, interpret question reflect upon and engage with the notion of “diversity”.
CO2: Recall the cultural diversity at work place in an organization.
CO3: Support the business case for workforce diversity and inclusion.
CO4: Identify diversity and work respecting cross cultural environment.

CO5: Assess contemporary organizational strategies for managing workforce diversity and inclusion.

Subject and code: **MARKETING ANALYTICS - G 401 DE2a.6**

Course Outcomes:

CO1: Understand the importance of marketing analytics for forward looking and systematic allocation of marketing resources

CO2: Apply marketing analytics to develop predictive marketing dashboard for organization

CO3: Analyse data and develop insights to address strategic marketing challenges

CO4: Execute the models on Predictions and Classifications on R Software. Know the applications of analytics in marketing.

Subject and code: **RETAIL OPERATIONS MANAGEMENT - G 401 DE2b.6**

Course Outcomes:

CO1: Compare various retail formats and technological advancements for setting up appropriate retail business.

CO2: Identify the competitive strategies for retail business decisions.

CO3: Examine the site location and operational efficiency for marketing decisions.

CO4: Analyse the effectiveness of merchandising and pricing strategies.

CO5: Assess store layout and planogram for retail business.

Subject and code: **SOURCING FOR LOGISTICS AND
SUPPLY CHAIN MANAGEMENT - G 401 DE2c.6**

Course Outcomes:

CO1: Understand the role of sourcing in logistics and supply chain management, and its impact on overall business performance.

CO2: Analyze and evaluate sourcing strategies and decisions, including make-or- buy, insourcing vs. outsourcing, and supplier selection criteria.

CO3: Develop effective supplier relationship management skills, including negotiation, communication, and collaboration.

CO4: Apply sourcing best practices, including risk management, sustainability, and ethical sourcing.

CO5: Evaluate the impact of technology and innovation on sourcing, and apply relevant tools and techniques to optimize sourcing processes and outcomes..

Subject and code: **GOODS AND SERVICES TAX - G 401 VO1.6**

Course Outcomes:

CO1: Understand the basics of taxation, including the meaning and types of taxes, and the differences between direct and indirect taxation.

CO2: Analyze the history of indirect taxation in India and the structure of the Indian taxation system.

CO3: Understand the framework and definitions of GST, including the constitutional framework, CGST, SGST, IGST, and exemptions from GST.

CO4: Understand the time, place, and value of supply under GST, and apply this

knowledge to calculate the value of supply and determine GST liability.
 CO5: Understand input tax credit under GST, including its meaning and process for availing it, and apply this knowledge to calculate net GST liability.

Subject and code: Enterprise Resource Planning - G 401 VO2.6

Course Outcomes:

CO1: Understand the business process of an enterprise to grasp the activities of ERP project management cycle to understand the emerging trends in ERP developments.
 CO2: Integrate and automate the business processes and shares information enterprise-wide.
 CO3: Explore the significance of ERP to provide a solution for better project management.
 CO4: Enable the students to understand the various process involved in implementing ERP in a variety of business environment
 CO4: Understand the issues involved in design and implementation of ERP systems

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 400 D B.B.A. (Business Analytics)
PROGRAMME OUTCOMES	
<p>PO1: Understand concepts and principles of management/business; identify the opportunities in the corporate environment and manage the challenges. PO2: Demonstrate the knowledge of management science to solve complex corporate problems using limited resources. Display enhanced personality and soft skills. PO3: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. PO4: Demonstrate entrepreneurial competencies. PO5: Exhibit managerial skills in the areas of marketing, finance, HR, etc. PO6: Identify business opportunities, design and implement innovations in workspace. PO7: Possess a sturdy foundation for higher education.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO1: Acquire practical learning through summer internship, industrial visit and Business Plan etc. PSO2: Demonstrate analytical and problem-solving skills through specialization in Finance, Human Recourse, and Marketing to solve the business issues. PSO3: Understand and develop the new dimensions of knowledge through open electives to cater the need of the industry. PSO4: Comprehend the core concepts, methods and practices in management. PSO5: Venture into his/her own business or excel in executive roles in private/government sector. PSO6: Demonstrate the ability to create business plans.</p>	

PSO7: Develop an understanding of business that reflects the moral responsibility of business to all relevant stakeholders and the natural environment.
PSO8: Matured Individuals and responsible Citizens to the country.
PSO9: Demonstrate Ability to work in Groups.

Semester- I

Subject and code : Management Principles & Practice - 401 DC1.1

Course Outcomes:

CO1: The ability to understand concepts of business management, principles and function of management.
CO2: The ability to explain the process of planning and decision making.
CO3: The ability to create organization structures based on authority, task and responsibilities.
CO4: The ability to explain the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.
CO5: The ability to understand the requirement of good control system and control techniques.

Subject and code: Fundamentals of Business Accounting - G 401 DC2.1

Course Outcomes:

CO1: Understand the framework of accounting as well accounting standards.
CO2: Ability to analyse journal entry and Prepare Ledger account.
CO3: Ability to prepare subsidiary books and bank reconciliation statement.
CO4: Ability to prepare Trial Balance and final accounts of proprietary concern
CO5: Understand the basic framework of tally and construct final accounts through application of tally.

Subject and code: Spread Sheet Modelling- G 401 DC 3a.1

Course Outcomes:

CO1: Describe and demonstrate the importance of MS Excel and its functionalities.
CO2: Identify, interpret, and explain the fundamentals concepts pertaining to Data Visualization and Storytelling.
CO3: Design, compose and employ the use of different chart and plots under MS Excel for Dashboard building.
CO4: Create and demonstrate the working of Interactive Dashboards using MS Excel Application.
CO5: Classify different techniques of Reporting, Sharing and Authorizations used in MS Excel with regards to Dashboards.

Subject and code: BASIC ECONOMICS (OE) - G 401 OE 1.1

Course Outcomes:

CO1. Explain how consumers make rational choices using the concept of utility
CO2: To understand the concept of consumer surplus.
CO3: Analyse the factors that affect market demand and market supply and illustrate their interaction for achieving equilibrium in price and quantity.
CO4: Analyse how producer applies the marginal decision rule to maximize the profit in producing goods or services..

Subject and code: Business Organization - G 401 OE 2.1

Course Outcomes:

CO1: An understanding of the nature, objectives and social responsibilities of business
CO2: An ability to describe the different forms of organisations

CO3: An understanding of the basic concepts of management
CO4: An understanding of functions of management.
CO5: An understanding of different types of business combinations.

Subject and code: Business Economics (OEC) - G 401 OE 3.1

Course Outcomes

CO1: To acquaint the students with basic concept and objectives of business economics.
CO2: It enables the students to analyse the consumer behaviour in different business situations.
CO3: To stimulate the student's interest by showing the relievable and use of various economic theories.
CO4: To apply economic reasoning to problems of business.
CO5: To know about the economics concept of business

**Subject and code: Office Organization and Management (OEC)
G 401 OE 4.1**

Course Outcomes:

CO1. An understanding of basic knowledge of office organisation and management
CO2: Demonstrate skills in effective office organisation
CO3: Ability to maintain office records
CO4: Ability to maintain digital record.
CO5: Understanding of different types of organisation structures and responsibilities as future office managers.

Semester- II

Subject and code: Corporate Accounting and Reporting - G 401 DC 2.2

Course Outcomes:

CO1: The ability to understand the process of public issue of shares, alteration of shares and accounting for the same
CO2: The ability to prepare final accounts of joint stock companies.
CO3: The ability to understand different ways of valuing corporate shares and goodwill.
CO4: The ability to prepare and evaluate vertical and horizontal analysis of financial statements and the skill of preparing financial reports,
CO5: The ability to understand company's annual reports.

Subject and code: Human Resource Management - G401 DC 1.2

Course Outcomes:

CO1: To describe the role and responsibility of Human resource management functions on business and also to understand the recent trends in HR practices.
CO2: To understand the concepts such as HRP, Recruitment and Selection process HR Demand Forecasting, HR supply forecasting, Job Analysis, Specification, Job Enlargement, Job Rotation, Job Enrichment, Psychometric tests for Selection.
CO3: To infuse the concept of induction, training and compensation aspects.
CO4: To explain the concepts of performance appraisal and its process. Also explain the concepts of Right Sizing of Work Force, Need for Right Sizing.
CO5: To demonstrate Employee Engagement and Psychological Contract, Employee Engagement (EE): Drivers of Engagement -Measurement of EE, Benefits of EE.

Subject and code : Python Programming- G 401 DC 3a.2

Course Outcomes:

<p>CO1: Elucidate and implement Numpy arrays using Python</p> <p>CO2: Perform advanced array operations using Numpy library.</p> <p>CO3: Implement data manipulations and aggregations using Pandas.</p> <p>CO4: Employ the use of Pandas for Joining, Combining and Reshaping datasets.</p> <p>CO5: Deploy visual charts and plots based on Matplotlib package and implement geographical mapping based on data points.</p>
Subject and code : BUSINESS ENVIRONMENT - G401 DC 4.2
Course Outcomes:
<p>CO1: An Understanding of components of business environment.</p> <p>CO2: Ability to analyse the environmental factors influencing business organisation.</p> <p>CO3: Ability to demonstrate Competitive structure analysis for select industry.</p> <p>CO4: Ability to explain the impact of fiscal policy and monetary policy on business.</p> <p>CO5: Ability to analyse the impact of economic environmental factors of business.</p>
Subject and code : MANAGERIAL ECONOMICS (OE) - G401 OE 1.2
Course Outcomes:
<p>CO1: To acquaint with the basic knowledge on the concept of managerial economics.</p> <p>CO2: To understand different market structures within which a firm operates.</p> <p>CO3: To enable the students to gain knowledge about the various tools, techniques and concepts of managerial economics.</p> <p>CO4: To understand the process of decision making by the consumers and producers.</p>
Subject and code : People Management- G 401 OE 2.2
Course Outcomes:
<p>CO1: Ability to examine the difference between People Management with Human resource Management</p> <p>CO2. Ability to explain the need for and importance of People Management.</p> <p>CO3. Ability to explain role of manager in different stages of performance management process</p> <p>CO4. Ability to list modern methods of performance and task assessment.</p> <p>CO5. Ability to analyse the factors influencing the work life balance of an working individual.</p>
Subject and code : RETAIL MANAGEMENT- G401 OE 3.2
Course Outcomes:
<p>CO1. An understanding of the types and forms of Retail business, Analysis of Retail life cycle. Also help understand the factors influencing present Indian retail scenario.</p> <p>CO2: Ability to examine Consumer Behaviour in various environments and its implication on retailing.</p> <p>CO3: Ability to analyse various Retail operations and evaluate them, also understand the concepts of Market area analysis, Trade area analysis, Rating Plan method and Site evaluation.</p> <p>CO4: Ability to analyse various marketing mix elements in retail operations including Supply channel – SCM principles – Retail logistics – computerized replenishment system – corporate replenishment policies</p> <p>CO5: Understand the workings of Integrated systems and networking – EDI – Bar coding – Electronic article surveillance – Electronic shelf labels – Customer database management system.</p>

Department Name:	G 500P A
-------------------------	-----------------

B. Sc. PHYSICS**PROGRAMME OUTCOMES**

PO-1: Discipline Knowledge: Knowledge of science and ability to apply to relevant areas.
PO-2: Problem solving: Execute a solution process using first principles of science to solve problems related to respective discipline.
PO-3: Modern tool usage: Use a modern scientific, engineering and IT tool or technique for solving problems in the areas of their discipline.
PO-4: Ethics: Apply the professional ethics and norms in respective discipline.
PO-5: Individual and teamwork: Work effectively as an individual as a team member in a multidisciplinary team.
PO-6: Communication: Communicate effectively with the stake holders, and give and receive clear instructions

PROGRAMME SPECIFIC OUTCOMES

PSO 1 : Understand and apply the principles and concepts in various disciplines of Physics.
PSO 2: Develop the ability in Physics to solve analytical problems, think methodically, independently to draw logical conclusions.

Semester- I**Subject and code : Mechanics and Properties of Matter - G 501 DC1.1****Course Outcomes:**

CO1: will learn to deduce the dimensions of a physical quantity, will learn about accuracy of measurement and sources of errors, importance of significant figures.
CO2: will perceive the nuances of motion in one dimension and the ideas connected with it and understand the invariance of physical laws under translations.
CO3. understand the basic concepts of elasticity, gain the knowledge about the properties of materials
CO4. study the motion of viscous fluids
CO5. effectively use measuring instruments to quantify observable phenomena
CO6. understand the principles and methods used in analyzing motion of particle, verify conservation laws and gain knowledge about the rigid body mechanics.
CO7. grasp the ideas of classical theory of relativity, special theory

Subject and code: Practical-Lab - G 501 DC2.1P**Course Outcomes:**

CO1: will learn to deduce the dimensions of a physical quantity, will learn about accuracy of measurement and sources of errors, importance of significant figures.
CO2: will perceive the nuances of motion in one dimension and the ideas connected with it and understand the invariance of physical laws under translations.
CO3. understand the basic concepts of elasticity, gain the knowledge about the properties of materials

Subject and code: Electrical Circuits and Wiring - G 501 OE1.1**Course Outcomes:**

CO - 1: Will learn the various terms needed to understand the basics of current electricity.
CO - 2: Will acquire sufficient working knowledge to identify and appreciate the merit of various passive circuit elements.
CO - 3: Will get a foothold on the need and applications of electrical circuits.

CO - 4: Will graduate into understanding different sources of EMF and working of motors.
 CO - 5: Will acquire skills in electrical protection systems.
 CO-6: Will gain an understanding of electrical cables used in both domestic and industrial situations.
 CO-7: Will learn to calculate the electrical energy consumed by various appliances

Semester- II

Subject and code: Electricity and Magnetism - G 501 DC1.2

Course Outcomes:

CO-1: Will learn the requires mathematical skills to understand concepts of electricity, magnetism and electromagnetism.
 CO-2: Will gain the needed knowledge of the fundamental laws of electrostatics and their application in electrostatics
 CO-3: Will acquire the ability to differentiate between the effect of steady and variable currents in electrical circuits.
 CO-4: Will understand the intimate connection between electricity and magnetism x x x x
 CO-5: Using the ideas obtained from variable currents will comprehend the concepts of converting other forms of energy into electrical energy
 CO-6: Will realise that light waves are electromagnetic waves

Subject and code: Practical-Lab - G 501 DC2.2P

Course Outcomes:

CO-1: Will learn the requires mathematical skills to understand concepts of electricity, magnetism and electromagnetism.
 CO-2: Will gain the needed knowledge of the fundamental laws of electrostatics and their application in electrostatics
 CO-3: Will acquire the ability to differentiate between the effect of steady and variable currents in electrical circuits.

**Subject and code Renewable Energy and Energy Harvesting
 G 501 OE1.2**

Course Outcomes:

CO - 1: Will be able to learn about different energy sources and know the difference between renewable and non- renewable sources of energy.
 CO - 2: Will know the significance of solar energy and of different techniques to harness solar energy.
 CO - 3: Will gain an idea about formation of waves and standing wave patterns and analysis of longitudinal and transverse waves.
 CO - 4: Will acquire knowledge of wind energy and methods to tap energy from the blowing wind to generate electrical power.
 CO - 5: Will gain familiarity about conventional energy sources and their impact on

climate.

Semester- III

Subject and code: Waves and Optics - G 501 DC1.3

Course Outcomes:

CO-1: Will learn the fundamentals of oscillations, periodic motion, simple harmonic motion and wave propagation

CO-2: will perceive the nuances of wave energy and its implications x x x

CO-3. Will understand the basic concepts of stationary waves and will be enabled to relate it to music.

CO-4. Will study the fundamentals of optical phenomena: namely interference, diffraction and polarization.

CO-5. Will learn to setup experiments related to wave optics.

CO-6. Will understand the principles and methods used in analyzing interference fringes.

CO-7. Will be able to understand the concept of diffraction and use it to make precise measurements.

Subject and code: Practical-Lab - G 501 DC2.3P

Course Outcomes:

CO-1: Will learn the fundamentals of oscillations, periodic motion, simple harmonic motion and wave propagation

CO-2: will perceive the nuances of wave energy and its implications x x x

CO-3. Will understand the basic concepts of stationary waves and will be enabled to relate it to music.

CO-4. Will study the fundamentals of optical phenomena: namely interference, diffraction and polarization.

Subject and code: Fundamentals of Optics and Electricity - G 501 OE1.3

Course Outcomes:

CO-1: Will learn the fundamentals of oscillations, periodic motion, simple harmonic motion and wave propagation

CO-2: will perceive the nuances of wave energy and its implications x x x

CO-3. Will understand the basic concepts of stationary waves and will be enabled to relate it to music.

CO-4. Will study the fundamentals of optical phenomena: namely interference, diffraction and polarization.

Semester- IV

Subject and code: Thermal Physics and Electronics - G 501 DC1.4**Course Outcomes:**

CO-1: Will learn the mathematical skills to understand concepts of thermal physics and electronics.

CO-2: Will gain the needed knowledge of the fundamental laws of thermal physics and their application

CO-3: Will acquire the ability to differentiate between the effect of steady and variable currents in electrical circuits.

CO-4: Will understand the intricacies of thermal physics and electronics.

CO-5: Using the ideas obtained from variable currents will comprehend the concepts of converting other forms of energy into electrical energy

CO-6: Will understand the scope of heat and thermodynamics in further academic pursuits and also factor in the need of a functional as well as advanced knowledge of electronics.

Subject and code: Practical-Lab - G 501 DC2.4P**Course Outcomes:**

CO-1: Will learn the mathematical skills to understand concepts of thermal physics and electronics.

CO-2: Will gain the needed knowledge of the fundamental laws of thermal physics and their application

CO-3: Will acquire the ability to differentiate between the effect of steady and variable currents in electrical circuits.

Subject and code : FUNDAMENTALS OF ENERGY STORAGE DEVICES AND INVERTERS - G 501 OE1.4**Course Outcomes:**

CO-1. Learn about the fundamental principles of electricity and capacitors.

CO-2. Gain working knowledge on inverters in the field of energy storage.

CO-3. Acquire the basic knowledge of principles of energy storage devices.

CO-4. Gain a working knowledge on the scale of domestic energy consumption.

Semester- V**Subject and code : Classical Mechanics and Quantum Mechanics
G501 DC1.5****Course Outcomes:**

CO1: Failure of classical physics at the microscopic level. (BL-L2)

CO2: Relationship between the normalization of a wave function and the ability to correctly calculate expectation values or probability densities. (BL-L3)

CO3: Minimum uncertainty of measuring both observables on any quantum state. (BL-

L2)

C04: The time- dependent and time – independent Schrodinger equation for simple potentials like for instance one – dimensional potential well and Harmonic oscillator.(BL-L3)

C05: Hermitian operators, their eigenvalues and eigenvectors. It teaches about various commutation and uncertainty relations.(BL-L2)

Subject and code : PRACTICAL LAB G501 DC2.5P

Course Outcomes:

C01: Failure of classical physics at the microscopic level. (BL-L2)

C02: Relationship between the normalization of a wave function and the ability to correctly calculate expectation values or probability densities. (BL-L3)

C03: Minimum uncertainty of measuring both observable on any quantum state. (BL-L2)

C04: The time- dependent and time – independent Schrodinger equation for simple potentials like for instance one – dimensional potential well and Harmonic oscillator.(BL-L3)

C05: Hermitian operators, their eigenvalues and eigenvectors. It teaches about various commutation and uncertainty relations.(BL-L2)

**Subject and code: Elements of Atomic, Molecular and Laser Physics
G 501 DC3.5**

Course Outcomes:

C01: Describe atomic properties using basic atomic models.

C02: Interpret atomic spectra of elements using vector atom model.

C03: Interpret molecular spectra of compounds using basics of molecular physics.

C04: Explain Laser systems and their applications in various fields.

Subject and code: PRACTICAL LAB G501 DC4.5P

Course Outcomes:

C01: Describe atomic properties using basic atomic models.

C02: Interpret atomic spectra of elements using vector atom model.

C03: Interpret molecular spectra of compounds using basics of molecular physics.

C04: Explain Laser systems and their applications in various fields.

Semester- VI

**Subject and code : Elements of Condensed Matter and Nuclear Physics
G501 DC1.6**

Course Outcomes:

C01: A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X rays by crystalline materials.

C02: Knowledge of lattice vibrations, phonons and in depth knowledge of Einstein and Debye theory of specific heat of solids.

C03: Knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.

C04: Securing an understanding about the dielectric and ferroelectric properties of materials.

C05: Understand the basic idea about superconductors and their classifications.

C06: Students will study the basic properties of nucleus and get the idea of its inner information. Learn the concepts of binding energy and binding energy per nucleon

versus mass number graph.

SUBJECT and Code: PRACTICAL LAB G501 DC2.6P

Course Outcomes:

CO1: Knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.

CO2: Securing an understanding about the dielectric and ferroelectric properties of materials.

CO3: Understand the basic idea about superconductors and their classifications.

CO4: Students will study the basic properties of nucleus and get the idea of its inner information. Learn the concepts of binding energy and binding energy per nucleon versus mass number graph.

SUBJECT and Code: : Electronic Instrumentation and Sensors - G 501 DC3.6

Course Outcomes:

CO1. Identify different types of test and measuring instruments used in practice and understand their basic working principles.

CO2. Get hands on training in wiring a circuit, soldering, making a measurement using an electronic circuit used in instrumentation.

CO3. Have an understanding of the basic electronic components viz., resistors, capacitors, inductors, discrete and integrated circuits, colour codes, values and pin diagram, their practical use.

CO4. Understanding of the measurement of voltage, current, resistance value, identification of the terminals of a transistor and ICs.

CO5. Identify and understand the different types of transducers and sensors used in robust and hand held instruments.

CO6. Understand and give a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.

CO7. Connect the concepts learnt in the course to their practical use in daily life.

CO8. Develop basic hands on skills in the usage of oscilloscopes, multimeters, rectifiers, amplifiers, oscillators and high voltage probes, generators and digital meters.

CO9. Servicing of simple faults of domestic appliances: Iron box, immersion heater, fan, hot plate, battery charger, emergency lamp and the like.

SUBJECT and Code: PRACTICAL LAB G501 DC4.6P

Course Outcomes:

CO1. Identify different types of test and measuring instruments used in practice and understand their basic working principles.

CO2. Get hands on training in wiring a circuit, soldering, making a measurement using an electronic circuit used in instrumentation.

CO3. Have an understanding of the basic electronic components viz., resistors, capacitors, inductors, discrete and integrated circuits, colour codes, values and pin diagram, their practical use.

CO4. Understanding of the measurement of voltage, current, resistance value, identification of the terminals of a transistor and ICs.

CO5. Identify and understand the different types of transducers and sensors used in robust and hand held instruments.

CO6. Understand and give a mathematical treatment of the working of rectifiers, filter,

data converters and different types of transducers.
 CO7. Connect the concepts learnt in the course to their practical use in daily life.
 CO8. Develop basic hands on skills in the usage of oscilloscopes, multimeters, rectifiers, amplifiers, oscillators and high voltage probes, generators and digital meters.
 CO9. Servicing of simple faults of domestic appliances: Iron box, immersion heater, fan, hot plate, battery charger, emergency lamp and the like.

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 500P A B. Sc. CHEMISTRY
-------------------------	--------------------------------------

PROGRAMME OUTCOMES

PO. 1: Develop enthusiasm for Chemistry and its application in various fields of life.
 PO. 2: Have a broad and balanced knowledge and understanding of key concepts in Chemistry.
 PO. 3: Develop a range of practical skills to understand and assess risks and work safely measures to be followed in the laboratory.
 PO. 4: Develop the ability to apply standard methodology to the solution of problems in Chemistry.
 PO. 5: Gain knowledge and skill towards employment or higher education in Chemistry or multi-disciplinary areas involving Chemistry.
 PO. 6: Plan and carry out experiments independently and assess the significance of outcomes and to cater to the demands of chemical Industries of well-trained graduates.
 PO. 7: Adapt and apply methodology to the solution of unfamiliar types of problems.
 PO. 8: Critically aware of advances at the forefront of chemical sciences, prepare effectively for professional employment or research degrees in chemical sciences and to develop an independent and responsible work ethics.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Students will have a firm foundation in the fundamentals and applications of Chemistry and its multidisciplinary approach towards physical or biological sciences.

PSO 2: Students through the study of Chemistry will be prepared for various opportunities in the fields of pharmaceuticals, chemical manufacturing, forensic science, food products, environmental monitoring, plastic, cosmetics & agro-industries etc. in addition to oil, gas and power sectors as well as defence services.

Semester- I
Subject and code : ANALYTICAL AND ORGANIC CHEMISTRY- I G 502 DC1.1
Course Outcomes:
CO 1: The concepts of chemical analysis, accuracy, precision and statistical data treatment. CO 2: The errors in chemical analysis and methods of minimizing. CO 3: The preparation of standard solutions and dilution of stock solution. CO 4: The concept of volumetric and gravimetric analysis and deducing the conversion factor for determination. CO 5: General purification techniques and different types of chromatographic methods. CO 6: Handling of toxic chemicals, concentrated acids and organic solvents and practice safety procedures. CO 7: The concepts of organic reactions and techniques of writing the movement of electrons, bond breaking, bond forming and reactive intermediates involved. CO 8: The concepts of aromaticity, resonance and hyperconjugation. CO 9: Understand the preparation of alkanes, alkenes, dienes and their reactions. CO 10: Understand the mechanism of nucleophilic, electrophilic reactions.
Subject and code: ANALYTICAL AND ORGANIC CHEMISTRY PRACTICALS-I - G 502 DC2.1P
Course Outcomes:
CO 1: The concepts of chemical analysis, accuracy, precision and statistical data treatment. CO 2: The errors in chemical analysis and methods of minimizing. CO 3: The preparation of standard solutions and dilution of stock solution. CO 4: The concept of volumetric and gravimetric analysis and deducing the conversion factor for determination. CO 5: General purification techniques and different types of chromatographic methods.
Subject and code: CHEMISTRY IN DAILY LIFE - G 502 OE1.1
Course Outcomes:
CO1: To understand chemical reactions and strategies to balance them. the relative quantities of reactants and products. the fundamental properties of atoms, molecules, and the various states of matter.
Semester- II
Subject and code: INORGANIC AND PHYSICAL CHEMISTRY-I G 502 DC1.2
Course Outcomes:
CO 1: Basics of Quantum mechanics, quantum numbers and its significance CO 2: Rules governing electronic configuration of elements CO 3: Variation in properties of s and p block elements CO 4: Deviation of real gases from ideal gases. CO 5: Molecular velocities associated with gases CO 6: Properties of liquids and its determination.

CO 7: Concept of refractive index and its determination

CO 8: Different types of crystal systems.

CO 9: The structure of liquid crystals and its applications.

**Subject and code: INORGANIC AND PHYSICAL CHEMISTRY
PRACTICALS-I - G 502 DC2.2P**

Course Outcomes:

CO 1: Basics of Quantum mechanics, quantum numbers and its significance

CO 2: Rules governing electronic configuration of elements

CO 3: Variation in properties of s and p block elements

CO 4: Deviation of real gases from ideal gases.

CO 5: Molecular velocities associated with gases

CO 6: Properties of liquids and its determination.

CO 7: Concept of refractive index and its determination

CO 8: Different types of crystal systems.

CO 9: The structure of liquid crystals and its applications.

Subject and code : MOLECULES OF LIFE - G 502 OE1.2

Course Outcomes:

CO1: Molecular velocities associated with gases

CO2: The structure of liquid crystals and its applications.

Semester- III

Subject and code: ANALYTICAL AND ORGANIC CHEMISTRY- II : G 502 DC1.3

Course Outcomes:

CO-1: Interrelationship among frequency, wavelength and wave number and importance of validation parameters of an instrumental method.

CO-2: Principle, instrumentation and applications of spectrophotometry, nephelometry and turbidometry

CO-3: Fundamentals of separation methods and principles of paper, thin layer and column chromatography.

CO-4: Learn types of solvent extraction and their applications.

CO-5: Learn nomenclature and reactions of polynuclear aromatic compounds.

CO-6: Concept and importance of intermediates in organic chemistry

CO-7: Concept of stereochemistry and its importance

CO-8: The various projection formulae and the techniques of designating the

molecules into R, S, D, L nomenclature.

**Subject and code: ANALYTICAL AND ORGANIC CHEMISTRY PRACTICALS-II
Practical-Lab - 502 DC2.3P**

Course Outcomes:

CO-1: Interrelationship among frequency, wavelength and wave number and importance of validation parameters of an instrumental method.

CO-2: Principle, instrumentation and applications of spectrophotometry, nephelometry and turbidometry

CO-3: Fundamentals of separation methods and principles of paper, thin layer and column chromatography.

CO-4: Learn types of solvent extraction and their applications.

CO-5: Learn nomenclature and reactions of polynuclear aromatic compounds.

CO-6: Concept and importance of intermediates in organic chemistry

CO-7: Concept of stereochemistry and its importance

CO-8: The various projection formulae and the techniques of designating the molecules into R, S, D, L nomenclature.

**Subject and code: Structure, Bonding and Concepts in Organic Chemistry
G 502 OE1.3**

Course Outcomes:

CO-1: Recognize and describe atomic structure, electron configurations, and the principles of molecular orbital theory.

CO-2: Describe and apply bonding theories, such as covalent bonding, ionic bonding, and polar covalent bonding, in organic molecules.

CO-3: Predict bond strengths, lengths, and angles, and understand the concept of bond polarity.

Semester- IV

Subject and code: Inorganic and Physical Chemistry-II G 502 DC1.4

Course Outcomes:

CO 1: Identify the possible type of arrangements of ions in ionic compounds

CO 2: Relate different energy parameters like, lattice energy, entropy, enthalpy and solvation energy in the dissolution of ionic solids

CO 3: Write the M.O. energy diagrams for simple molecules

CO 4: The fundamentals of thermodynamics including the laws, the concept of entropy and free energy functions and their applications.

CO 5: The concepts of surface chemistry, catalysis and their applications.

CO 6: The theoretical and experimental aspects of chemical kinetics

CO 7: Electrochemistry dealing with electrolytes in solution

CO 8: Understand the chemistry of alpha, beta, neutron, and gamma radiation and calculate the half-life of a radioisotope.

CO 8: Conductance measurements and applications

**Subject and code: INORGANIC AND PHYSICAL CHEMISTRY PRACTICALS
G 502 DC2.4P**

Course Outcomes:

CO 1: Identify the possible type of arrangements of ions in ionic compounds

CO 2: Relate different energy parameters like, lattice energy, entropy, enthalpy and solvation energy in the dissolution of ionic solids

CO 3: Write the M.O. energy diagrams for simple molecules

CO 4: The fundamentals of thermodynamics including the laws, the concept of entropy and free energy functions and their applications.

**Subject and code : Electrochemistry, Corrosion and Metallurgy Course
Code: G 502 OE1.4**

Course Outcomes:

CO21: Describe key electrochemical concepts such as oxidation-reduction (redox) reactions, electrochemical cells, .

CO2: Explain the various types and mechanisms of corrosion, including galvanic, pitting, crevice, and stress-corrosion cracking.

CO3: Identify factors affecting corrosion rates and apply methods for corrosion control, such as coatings, cathodic protection, inhibitors, and material selection.

Semester- V

Subject and code : INORGANIC AND PHYSICAL CHEMISTRY-III - G 502 DC1.5

Course Outcomes:

CO 1: Understand the general characteristics of transition elements, oxidation states, colour and magnetic property.

CO 2: Expose the students to new theories of chemical bonding.

CO 3: Know the applications of HSAB concept.

CO 4: Define magnetic behaviour of different metal complexes and explain geometry of the complex based on magnetic moment data.

CO 5: Learn the IUPAC nomenclature and theories of coordination compounds.
CO 6: Learn Nuclear reactions and their applications.
CO 7: Understand quantum mechanical concepts and Schrodinger wave equation and its solutions.

Subject and code : INORGANIC AND PHYSICAL CHEMISTRY PRACTICALS-III - G 502 DC2.5P

Course Outcomes:

CO 1: Understand the general characteristics of transition elements, oxidation states, colour and magnetic property.
CO 2: Expose the students to new theories of chemical bonding.
CO 3: Know the applications of HSAB concept.
CO 4: Define magnetic behaviour of different metal complexes and explain geometry of the complex based on magnetic moment data.
CO 5: Learn the IUPAC nomenclature and theories of coordination compounds.
CO 6: Learn Nuclear reactions and their applications.
CO 7: Understand quantum mechanical concepts and Schrodinger wave equation and its solutions.

Subject and code : ORGANIC CHEMISTRY AND SPECTROSCOPY -I - G 502 DC3.5

Course Outcomes:

CO 1: Predict mechanism of electrophilic substitution reactions in heterocyclic compounds.
CO2: Compare the basicity of heterocyclic compound containing nitrogen.
CO3: Learn conformations and configurations of carbohydrates
CO4: To understand the structure and reactivity of amino acids.
CO 5: To gain knowledge of molecular-vibrational, rotational and Raman spectroscopy.
CO 6: To study the theory and applications of NMR and UV spectroscopy.

Subject and code : ORGANIC CHEMISTRY PRACTICALS - G 502 DC4.5P

Course Outcomes:

CO1: To understand the structure and reactivity of amino acids.
CO2: To gain knowledge of molecular-vibrational, rotational and Raman spectroscopy.
CO3: To study the theory and applications of NMR and UV spectroscopy.

Semester- VI

Subject and code: : INORGANIC AND PHYSICAL CHEMISTRY-IV - G502 DC1.6

Course Outcomes:

CO1: Be aware of the kinetics, stability, electronic spectra and types of bonding in complex compounds.
CO2: Know the importance of essential elements in the biological system.
CO3: Explain the basic definitions and terms in a phase diagram.

C04: Learn the applications of radioisotopes.

C05: Understand the applications of thermo-analytical methods.

C06: Study the mechanisms of thermal and photochemical reactions.

Subject and code: INORGANIC AND PHYSICAL CHEMISTRY-IV G502 DC2.6P

Course Outcomes:

C01: Be aware of the kinetics, stability, electronic spectra and types of bonding in complex compounds.

C02: Know the importance of essential elements in the biological system.

C03: Explain the basic definitions and terms in a phase diagram.

C04: Learn the applications of radioisotopes.

C05: Understand the applications of thermo-analytical methods.

C06: Study the mechanisms of thermal and photochemical reactions.

Subject and code: ORGANIC CHEMISTRY AND SPECTROSCOPY-II - G502 DC3.6

Course Outcomes:

C01: Understand the mechanism of nucleophilic substitution reactions and addition reactions with suitable examples.

C02: Know the importance and synthesis of vitamins.

C03: Study mechanism of rearrangement reactions.

C04: Learn the basics of symmetry and group theory.

C05: Learn different photochemical processes.

C06: Learn principles and applications of atomic absorption spectroscopy.

**Subject and code: ORGANIC CHEMISTRY PRACTICALS
- G502 DC 4.6P**

Course Outcomes:

CO1: Understand the mechanism of nucleophilic substitution reactions and addition reactions with suitable examples.

CO2: Know the importance and synthesis of vitamins.

CO3: Study mechanism of rearrangement reactions.

CO4: Learn the basics of symmetry and group theory.

CO5: Learn different photochemical processes.

CO6: Learn principles and applications of atomic absorption spectroscopy.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 500P B B. Sc - MATHEMATICS
PROGRAMME OUTCOMES	
<p>PO 1 Disciplinary Knowledge: Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects</p> <p>PO 2 Communication Skills: Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modeling and solving of real life problems.</p> <p>PO 3 Critical thinking and analytical reasoning: The students undergoing the programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.</p> <p>PO 4 Problem Solving: The Mathematical knowledge gained by the students through the programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.</p> <p>PO 5 Research related skills: Student completing the program will develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.</p> <p>PO 6 Information/digital Literacy: The completion of the programme will enable the learner to use appropriate softwares to solve system of algebraic equation and differential equations.</p> <p>PO 7 Self – directed learning: Student completing the program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.</p> <p>PO 8 Moral and ethical awareness/reasoning: The student completing the program will develop an ability to identify unethical behavior such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life, in general and Mathematical studies, in particular.</p> <p>PO 9 Lifelong learning: The programme provides self-directed learning and lifelong learning skills. The programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.</p> <p>PO 10 Ability to peruse advanced studies and research in pure and applied Mathematical sciences.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1 To be familiar with suitable tools of mathematical analysis to handle issues and problems in Mathematics and related sciences.</p> <p>PSO 2 Acquire sufficient knowledge and skills to undertake further studies in Mathematics and its allied areas on multiple disciplines concerned with Mathematics.</p> <p>PSO 3</p>	

Develop a positive attitude towards mathematics as a technical language and valuable subject of study.

Semester- I

**Subject and code : Number Theory - I, Algebra - I and Calculus – I
G 503 DC1.1**

Course Outcomes:

CO1: Understand the elementary concepts of Number Theory.
CO2: Solve the system of homogeneous and non-homogeneous m linear equations in n variables.
CO3: Sketch curves in Cartesian and polar co-ordinates.
CO4: Identify and apply intermediate value theorem, mean value theorems and L'Hospital rule.

**Subject and code: Theory based practicals on Number Theory – I,
Algebra - I and Calculus – I - Course Code: G 503 DC2.1P**

Course Outcomes:

CO1: Learn Free and Open Source Software (FOSS) tools for computer programming.
CO2: Solve problems on Algebra and Calculus studied in MATDSCT 1.1 by using FOSS softwares.
CO3: Acquire knowledge of applications of algebra and calculus through FOSS.

Subject and code: Mathematics – I - G 503 OE1.1

Course Outcomes:

CO1: Understand the elementary concepts of Number Theory.
CO2: Solve the system of homogeneous and non-homogeneous m linear equations in n variables.
CO3: Identify and apply intermediate value theorem, mean value theorems and L'Hospital rule.

Semester- II

**Subject and code: Number Theory - II, Algebra - II and Calculus - II
G 503 DC1.2**

Course Outcomes:

CO1: Understand the Euler's ϕ -function and finite continued fractions.
CO2: Recognize the mathematical objects called Groups.
CO3: Identify cyclic and non-cyclic groups
CO4: Link the fundamental concepts of groups and symmetries of geometrical objects.
CO5: Understand the concept of partial derivatives of functions of several variables.
CO6: Find the Taylor's and Maclaurin's series of functions of two variables.
CO7: Find the extreme values of functions of two variables.
CO8: Understand the concepts of line integrals, multiple integrals and their applications.

**Subject and code: Practical on Number Theory – II, Algebra - II and
Calculus – II - G 503 DC2.2P**

Course Outcomes:

CO1: Learn Free and Open Source Software (FOSS) tools for computer programming.
CO2: Solve problems on Algebra and Calculus studied in MATDSCT 1.1 by using FOSS softwares.
CO3: Acquire knowledge of applications of algebra and calculus through FOSS.

Subject and code Mathematics – II - G 503 OE1.2

Course Outcomes:

CO1: Recognize the mathematical objects called Groups.
CO2: Identify cyclic and non-cyclic groups
CO3: Link the fundamental concepts of groups and symmetries of geometrical objects.
CO4: Find the extreme values of functions of two variables.
CO5: Understand the concepts of line integrals, multiple integrals and their applications.

Semester- III

**Subject and code: Ordinary Differential Equations and Real Analysis–I
G 503 DC1.3**

Course Outcomes:

CO1: Understand the concept of differential equation.
CO2: Classifies the differential equations with respect to their order and linearity.
CO3: Demonstrate skills in constructing rigorous mathematical arguments.
CO4: Demonstrate skills in communicating mathematics.
CO5: Understand and be able to apply basic definitions and concepts of convergence.
CO6: To prove simple statements involving convergent arguments.
CO7: Learn to solve differential equation using Scilab/Maxima

**Subject and code: Practicals on Ordinary Differential Equations and
Real Analysis – I - G 503 DC2.3P**

Course Outcomes:

CO1: Understand the concept of differential equation.
CO2: Classifies the differential equations with respect to their order and linearity.
CO3: Demonstrate skills in constructing rigorous mathematical arguments.

**Subject and code: (A) Ordinary Differential Equations
G 503 OE1.3**

Course Outcomes:

CO1: Understand the concept of differential equation.
CO2: Classifies the differential equations with respect to their order and linearity.
CO3: Demonstrate skills in constructing rigorous mathematical arguments.
CO4: Demonstrate skills in communicating mathematics.

Semester- IV

Subject and code: Partial Differential Equations and Integral Transforms - G 503 DC1.4

Course Outcomes:

- CO1: Understand the concept of Partial differential equation.
CO2: Classifies the Partial differential equations with respect to their order and linearity.
CO3: Understand and be able to apply various methods to solve Partial Differential Equations.
CO4: Learn to solve Integral Equations and differential equations using Laplace Transforms.

Subject and code: Practicals on Partial Differential Equations and Integral Transforms - G 503 DC2.4P

Course Outcomes:

- CO1: Understand the concept of Partial differential equation.
CO2: Classifies the Partial differential equations with respect to their order and linearity.
CO3: Understand and be able to apply various methods to solve Partial Differential Equations.
CO4: Learn to solve Integral Equations and differential equations using Laplace Transforms.

Subject and code : (A) Partial Differential Equations - G 503 OE1.4

Course Outcomes:

- CO1: Understand the concept of Partial differential equation.
CO2: Classifies the Partial differential equations with respect to their order and linearity.
CO3: Understand and be able to apply various methods to solve Partial Differential Equations.

Semester- V

Subject and code: Real Analysis-II and Complex Analysis - G 503 DC1.5

Course Outcomes:

- CO -1 carry out computations of upper and lower Riemann sums as well definite integrals.
CO -2 evaluate some improper integrals by using Beta, Gamma functions.
CO -3 perform basic mathematical operations (arithmetic, powers, roots) with complex numbers in Cartesian and polar forms.
CO -4 apply the concepts of analyticity and Cauchy Riemann Equations.
CO -5 describe basic properties of complex integration and having the ability to compute such integrals.

Subject and code: : Practicals on Real Analysis-II and Complex Analysis - G 503 DC2.5P

Course Outcomes:

- CO -1 carry out computations of upper and lower Riemann sums as well definite integrals.
CO -2 evaluate some improper integrals by using Beta, Gamma functions.
CO -3 perform basic mathematical operations (arithmetic, powers, roots) with

complex numbers in Cartesian and polar forms.
CO -4 apply the concepts of analyticity and Cauchy Riemann Equations.
CO -5 describe basic properties of complex integration and having the ability to compute such integrals.

Subject and code: Vector Calculus and Graph Theory - G 503 DC3.5

Course Outcomes:

CO -1 get introduced to the fundamentals of vector differential and integral calculus.
CO -2 get familiar with the various differential operators and their properties.
CO -3 get acquainted with the various techniques of vector integration.
CO -4 recollect the fundamentals of Analytical Geometry in 3D.
CO -5 interpret the geometrical aspects of planes and lines in 3D.

Semester- VI

Subject and code: Linear Algebra - G 503 DC1.6

Course Outcomes:

CO -1 recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces.
CO -2 use matrix algebra and the related matrices to linear transformations.
CO -3 learn Inner Product spaces and Gram-Schmidt process of orthogonalization.
CO -4 find Eigen values and Eigen vectors of a matrix which is used in the study of various other concepts.
CO -5 express some of the algebra operations between linear transformations.

Subject and code: Practicals on Linear Algebra - G 503 DC2.6P

Course Outcomes:

CO -1 recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces.
CO -2 use matrix algebra and the related matrices to linear transformations.
CO -3 learn Inner Product spaces and Gram-Schmidt process of orthogonalization.
CO -4 find Eigen values and Eigen vectors of a matrix which is used in the study of various other concepts.
CO -5 express some of the algebra operations between linear transformations.

Subject and code : Numerical Analysis - G 503 DC3.6

Course Outcomes:

CO -1 perform an error analysis for some method.
CO -2 approximate a function using an appropriate numerical method.
CO -3 solve a linear system of equations using an appropriate numerical method.
CO -4 derive appropriate numerical methods to solve interpolation based problems.
CO -5 calculate a definite integral using an appropriate numerical method.

Subject and code: Practicals on Numerical Analysis - G 503 DC4.6P

Course Outcomes:

CO -1 perform an error analysis for some method.
CO -2 approximate a function using an appropriate numerical method.
CO -3 solve a linear system of equations using an appropriate numerical method.
CO -4 derive appropriate numerical methods to solve interpolation based problems.
CO -5 calculate a definite integral using an appropriate numerical method.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences

Department Name:	G 500 D COMPUTER ANIMATION
PROGRAMME OUTCOMES	
PO1: Obtain a knowledge on fundamental and advanced aspects of computer animation, graphic design & visual effects. PO2: To innovate best practices for elements of design, web technology and Gaming. PO3: To explore the theories of multimedia and animation to design and develop 2D/3D animations, film-making, visual effects for the Interactive media PO4: Apply in depth knowledge of animation and the knowledge of principles of animation in every project. PO5: Able to work with professional skills in animation studios and production houses.	
PROGRAMME SPECIFIC OUTCOMES	
PSO 1 : Understand the techniques of 2D and 3D software. PSO2 : Understanding stop motion and basic traditional animation PSO3: Understand the concept of linear and nonlinear editing, Video Capture and VFX techniques PSO4: Understand the web designing method with interactive animation	
Semester- I	
Subject and code: Graphic Design for Animation - G 110 DC1.1/ G 512 DC1.1	
Course Outcomes:	
CO1: Understand the basic principles of graphic design using Corel Draw & Photoshop including typography, compositing, color, and composition CO2: Design layouts for web pages, paper adverts, brochures, CD covers, package designing event and exhibition stall designs, pop ups, touch ups, color corrections paintings, drawings, converting B/W photo to color CO3: Understand the vector and bitmap graphics and its properties CO4: Understand different tools and features of vector and bitmap software's. CO5: Select and create appropriate art to convey specific artistic expression that effectively communicates the artist intent. CO6: To able to create different kinds of designs like Logo, Brochures, certificates, greetings cards, pamphlets, business cards etc.	

CO7: Creating GIF Animation files
CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

Subject and code: Graphic Design Lab - G 110 DC1.1P/G 512 DC1.1P

Course Outcomes:

CO1: Understand the basic principles of graphic design using Corel Draw & Photoshop including typography, compositing, color, and composition
CO2: Design layouts for web pages, paper adverts, brochures, CD covers, package designing event and exhibition stall designs, pop ups, touch ups, color corrections paintings, drawings, converting B/W photo to color
CO3: Understand the vector and bitmap graphics and its properties
CO4: Understand different tools and features of vector and bitmap software's.
CO5: Select and create appropriate art to convey specific artistic expression that effectively communicates the artist intent.
CO6: To able to create different kinds of designs like Logo, Brochures, certificates, greetings cards, pamphlets, business cards etc.
CO7: Creating GIF Animation files CO8 Display competence in administering, scoring, reporting and analysis of psychometric tests.

**Subject and code: Environment & Character Sketching
G 110 OE 1.1**

Course Outcomes:

CO1: Do shading, colouring and gesture drawings.
CO2: Create different perspective sketching
CO3: Understand principles of art in detail.
CO4: Understand different pictorial drawings and dimensions.
CO5: Draw and understand geometrical structures.

Semester- II

Subject and code: Pre-Production and 2D Animation G 110 DC1.2/G 512 DC1.2

Course Outcomes:

CO1: Learn animation fundamentals and understand how animation works.
CO2: Knowledge about using animation principles in 2D applications and understand the fundamental skills of 2D space
CO3: Work on timeline and understand tools and features to create 2D drawings
CO4: Work systematically on layers and masking for creating motion animation
CO5: Rendering and exporting 2D animation files in different file formats.
CO6: Create animation sequences that employ basic cinematography principles and storytelling skills to create, develop and execute animation sequences
CO7: Develop, assemble and present a demo reel or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

Subject and code: 2D Animation Lab - G 110 DC1.2P/G 512 DC1.2P

Course Outcomes:

CO1: Learn animation fundamentals and understand how animation works.

CO2: Knowledge about using animation principles in 2D applications and understand the fundamental skills of 2D space

CO3: Work on timeline and understand tools and features to create 2D drawings

CO4: Work systematically on layers and masking for creating motion animation

CO5: Rendering and exporting 2D animation files in different file formats.

CO6: Create animation sequences that employ basic cinematography principles and storytelling skills to create, develop and execute animation sequences

CO7: Develop, assemble and present a demo reel or portfolio in a manner that meets current industry expectations, and highlights one's creativity, skills and proficiency with relevant animation software and related technologies.

Subject and code: Digital Designing G 110 OE 1.2

Course Outcomes:

CO1: Understand digital design for print and web: resolutions, files formats, tools & menus, layouts.

CO2: Design layouts for web pages, paper advertisements, brochures, CD covers, package designing event and exhibition stall designs, pop ups, color corrections paintings, drawings, converting B/W photo to color

CO3: A student will get a complete overview of the whole print from design to the layout to print it

CO4: Use basic Photoshop skills and concepts to develop effective graphics for both web and print media.

CO5: Discover how to edit their own photographs to get rid of dust and scratches, fix the color, and correct image exposure understand how best to choose fonts and colors for digital designs

CO6: Understand key industry-standard techniques, that are used in the print and design industries

Semester- III

Subject and code: Visual Effects G 110 DC1.3

Course Outcomes:

CO1: Understand the concept of linear and nonlinear editing.

CO2: Understand the concept of transitions, layering.

CO3: Mastering filmmaking terminology to communicate effectively throughout all stages of production.

CO4: Creating quality media productions including skills in story development, producing, cinematography, editing, and audio production/post production.

CO5: Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.

CO6: Identify hardware and software protocols specific to the field of visual effects.

CO7: Create photo-real images to match live action footage by the application of advanced rendering techniques.

CO8: Integrate 2D and/or 3D computer generated imagery and live action elements using compositing techniques.

Subject and code: Visual Effects Lab G 110 DC2.3P

Course Outcomes:

CO1: Understand the concept of linear and nonlinear editing.

CO2: Understand the concept of transitions, layering.

CO3: Mastering filmmaking terminology to communicate effectively throughout all stages of production.

CO4: Creating quality media productions including skills in story development, producing, cinematography, editing, and audio production/post production.

CO5: Edit and compress video for use in various delivery modes of digital media using standard digital video editing software.

CO6: Identify hardware and software protocols specific to the field of visual effects.

CO7: Create photo-real images to match live action footage by the application of advanced rendering techniques.

CO8: Integrate 2D and/or 3D computer generated imagery and live action elements using compositing techniques.

Subject and code: History of animation G 110 OE 1.3

Course Outcomes:

CO1: Understanding how the techniques in the past made things the way they are today

CO2: Understanding the thoughts, ideas, and concepts of various fields artists in the past

CO3: Gives an In-Depth Look at the World Art

CO4: Understanding & orient ourselves in the present animation techniques

CO5: Understand how to Integrate Information from the past

Semester- IV

Subject and code: 3D Modelling G 110 DC1.4

Course Outcomes:

CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space

CO2: Creating different types of polygon models

- CO3: Creating 3D objects using line & NURBS
- CO4: Creating interior designs & exterior designs
- CO5: Rendering and exporting 3D files in different image file formats.
- CO6: Create different 3D environments, models, structures, architectures.
- CO7: Understanding how mesh works in 3D modelling.

Subject and code: 3D Modelling Lab G 110 DC2.4P

Course Outcomes:

- CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space
- CO2: Creating different types of polygon models
- CO3: Creating 3D objects using line & NURBS
- CO4: Creating interior designs & exterior designs
- CO5: Rendering and exporting 3D files in different image file formats.
- CO6: Create different 3D environments, models, structures, architectures.
- CO7: Understanding how mesh works in 3D modelling.

Subject and code: Video editing G 110 OE 1.4

Course Outcomes:

- CO1: Identify and describe key terms, concepts, major trends and periods related to various modes of production.
- CO2: Learn how to combine basic design principles in video editing.
- CO3: Demonstrate skills required to create quality media productions
- CO4: Apply methodological design process for construction of a television program.
- CO5: Create an audio visual television program

Semester- V

Subject and code: 3D TEXTURING, CAMERA & LIGHTING - G 110 DC1.5

Course Outcomes:

- CO- 1 Give detailed texturing and colouring to 3D characters or objects.
- CO- 2 Understand how shaders are applied.
- CO- 3 Understand different mapping done to enhance the details of the object.
- CO- 4 Understand the concept of hair dynamics and different presets.
- CO- 5 Creating camera animations.
- CO- 6 Creating a desired lighting required for the 3D scene e.g. interiors, exteriors.

Subject and code: 3D TEXTURING LAB - G 110 DC 2.5P

Course Outcomes:

- CO1: Understand the concept of hair dynamics and different presets.
- CO2: Creating camera animations.
- CO3: Creating a desired lighting required for the 3D scene e.g. interiors, exteriors.

Subject and code : WEB DESIGNING & DEVELOPMENT - G 110 DC 3.5

Course Outcomes:
CO1: Understand the principles of creating an effective web page, including an in-depth consideration of information architecture. CO2: Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice. CO3: Learn the language of the web: HTML and CSS..
Subject and code: WEB DESIGNING LAB – G 110 DC 4.5P
Course Outcomes:
CO1: Develop skills in digital imaging (Adobe Photoshop.) CO2: Be able to embed social media content into web pages. CO3: To create web elements like buttons, banners & Bars and of course complete UI designs
Subject and code: STORY BOARD & SCRIPT WRITING –(Vocational)
Course Outcomes:
CO1: Write the scripts for movies and advertisements. CO2: Learn the good and bad body languages and essence of cinema. CO3: Develop skills in camera techniques and its meaning. CO4: Gaining knowledge of communication skills. CO5: Be able to understand and interpret movies.
Semester- VI
Subject and code : 3D RIGGING & ANIMATION - - G 110 DC 1.6
Course Outcomes:
CO1: Mastering 3D rigging and animation to bring characters, objects, and scenes to life CO2: Able to work as a character animator, creating movements and expressions for characters in films, TV shows, video games, and advertisements. CO3: Understand 3D animations to visualize buildings, interiors, and landscapes CO4: Understand Animation to explain complex medical and scientific concepts, making them easier to understand for both professionals and the general public. CO5: Understanding problem-solving skills as students figure out how to make characters move realistically, create convincing physics simulations, and troubleshoot technical issues. CO6: Creating a Character and different types of object animation clips
Subject and code: 3D RIGGING & ANIMATION LAB - G110 DC 2.6P
Course Outcomes:
CO- 1 Moving the skelton & Bones of 3D objects. CO- 2 Understand and create Object and character animation. CO- 3 Attaching skin to the bones
Subject and code: 3D DYNAMICS & EFFECTS – G 110 DC 3.6
Course Outcomes:
CO1: Mastering Dynamics and effects, particle, and emitters CO2: Able to work as a special effects artist, creating collisions and explosion for action films, TV shows, video games, CO3: Understand 3D animations to visualize sfx, interiors, and landscapes CO4: Understand Soft body and rigid body animation, making them easier to understand for both professionals and the general public.

CO5: Creating a Special effects and collider animations for advertisement company
Subject and code: TRADITIONAL ANIMATION (Vocational)
Course Outcomes:
CO1: Traditional animation skills make students a valuable asset to animation studios that create hand-drawn or hybrid animations.
CO2: Students will be able to work in the field of art and design, such as character design, storyboarding, concept art, and illustration.
CO3: Develop skills in drawing and sketching
CO4: Gaining knowledge to work as a freelance animator, taking on projects such as animated commercials, music videos, or short films.
CO5: Be able to understand to work in both traditional and digital animation pipelines

Department Name:	G 500P F B. Sc - COMPUTER SCIENCE
PROGRAMME OUTCOMES	
<p>PO1. Discipline knowledge: Acquiring knowledge on basics of Computer Science and ability to apply to design principles in the development of solutions for problems of varying complexity</p> <p>PO2. Problem Solving: Improved reasoning with strong mathematical ability to Identify, formulate and analyze problems related to computer science and exhibiting a sound knowledge on data structures and algorithms.</p> <p>PO3. Design and Development of Solutions: Ability to design and development of algorithmic solutions to real world problems and acquiring a minimum knowledge on statistics and optimization problems. Establishing excellent skills in applying various design strategies for solving complex problems.</p> <p>PO4. Programming a computer: Exhibiting strong skills required to program a computer for various issues and problems of day-to-day applications with thorough knowledge on programming languages of various levels.</p> <p>PO5. Application Systems Knowledge: Possessing a sound knowledge on computer application software and ability to design and develop app for applicative problems.</p> <p>PO6. Modern Tool Usage: Identify, select and use a modern scientific and IT tool or technique for modeling, prediction, data analysis and solving problems in the area of Computer Science and making them mobile based application software.</p> <p>PO7. Communication: Must have a reasonably good communication knowledge both in oral and writing.</p> <p>PO8. Project Management: Practicing of existing projects and becoming independent to launch own project by identifying a gap in solutions.</p> <p>PO9. Ethics on Profession, Environment and Society: Exhibiting professional ethics to maintain the integrality in a working environment and also have concern on societal impacts due to computer-based solutions for problems.</p> <p>PO10. Lifelong Learning: Should become an independent learner. So, learn to learn ability.</p> <p>PO11. Motivation to take up Higher Studies: Inspiration to continue educations towards advanced studies on Computer Science.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO1. The primary objective of this program is to provide a foundation of computing principles and business practices for effectively using/managing information systems</p>	

and enterprise software

PSO2. It helps students analyze the requirements for system development and exposes students to business software and information systems

PSO3. This course provides students with options to specialize in legacy application software, system software or mobile applications

PSO4. To produce outstanding IT professionals who can apply the theoretical knowledge into practice in the real world and develop standalone live projects themselves

PSO5. To provide opportunity for the study of modern methods of information processing and its applications.

PSO6. To develop among students the programming techniques and the problem- solving skills through programming

PSO7. To prepare students who wish to go on to further studies in computer science and related subjects.

PSO8. To acquaint students to Work effectively with a range of current, standard, Office Productivity software applications.

Semester- I

Subject and code : Computer Fundamentals and Programming in C G505DC1.1

Course Outcomes:

CO1: Operate desktop computers to carry out computational tasks

CO2: Understand working of hardware and software and the importance of operating systems

CO3: Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts

CO4: Read, understand and trace the execution of programs written in C language

CO5: Write the C code for a given problem

CO6: Perform input and output operations using programs in C

CO7: Write programs that perform operations on arrays

Subject and code: C Programming Lab - G505DC1.1P

Course Outcomes:

CO1: Write the C code for a given problem

CO2: Perform input and output operations using programs in C

CO3: Write programs that perform operations on arrays

Subject and code: Office Automation - G505OE1.1

Course Outcomes:

CO1: Compare and contrast various types of operating systems

CO2: Explain the purpose of office automation

CO3: Describe how information is stored and retrieved in/from computer memory

CO4: Know about various types of office automation software and their applications

CO5 ;Create document using word processing software

CO6: Design presentation using presentation software

CO7: Create worksheets using spreadsheet software

CO8: Store and retrieve data in/from database management application

Semester- II
Subject and code: Data Structures using C - G505DC2.2
Course Outcomes:
CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms CO2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs CO3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs CO4: Demonstrate different methods for traversing trees CO5: Compare alternative implementations of data structures with respect to performance CO6: Describe the concept of recursion, give examples of its use CO7: Discuss the computational efficiency of the principal algorithms for sorting and searching
Subject and code: Data Structures Lab - G505DC2.2P
Course Outcomes:
CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms CO2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs CO3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs CO4: Demonstrate different methods for traversing trees
Subject and code : Web Designing - G505OE2.2
Course Outcomes:
CO1: Understand various Internet related terminologies CO1: Explain features and evolution of Internet CO3: Explain the use of search engines CO4: Know the use of different tags available in HTML CO5: Design web pages using HTML5, CSS3, XML and XHTML CO6: Implement websites using linked web pages.
Semester- III
Subject and code: Object Oriented Programming Concepts and Programming in JAVA
Course Code: G505 DC3.3
Course Outcomes:
CO1: Understand the concepts of OOP and Java fundamentals. CO2: Write the Java programs using the concepts of inheritance, interfaces, packages, multithreading and applets.

Subject and code: JAVA lab - G505DC3.3P
Course Outcomes:
CO1: Understand the concepts of OOP and Java fundamentals. CO2: Write the Java programs using the concepts of inheritance, interfaces, packages, multithreading and applets.
Subject and code: IoT - G505OE3.3
Course Outcomes:
CO1: To become familiar with the basic concepts of IoT. CO2: To become familiar with IoT access techniques.
Semester- IV
Subject and code: Data Base Management System - G505DC4.4
Course Outcomes:
CO1: To become familiar with the basic issues of transaction processing and concurrency control CO2: To become familiar with database storage structures and access techniques
Subject and code: RDBMS lab - G505DC4.4P
Course Outcomes:
CO1: To become familiar with the basic issues of transaction processing and concurrency control CO2: To become familiar with database storage structures and access techniques
Semester- V
Subject and code: Programming in Python - G505DC5.5
Course Outcomes:
CO1: To become familiar with the basic programming with python. CO2: To become familiar with data visualization, database structure and libraries in python.
Subject and code: Python Lab - G 505DC5.5P
Course Outcomes:
CO-1. Examine python syntax & semantics and be fluent in using flow Control functions. CO-2. Demonstrate proficiency in handling strings and file systems in Python. CO-3. Create & run python programs using core data structures like Lists, dictionaries, tuples, and sets and use of REs. CO-4. Interpret and apply the concepts of OOP. CO-5. Programming and web services. CO-6. Implement exemplary applications related to network CO-7. Implement database applications in python.
Subject and code: COMPUTER NETWORKS - G505DC6.5
Course Outcomes:
CO1: To become familiar with the basic programming with network.

CO2: To familiar with network concepts, communication and design of networks.
Subject and code: Computer Network Lab - G 505DC6.5P
Course Outcomes:
CO-1. Identifies protocols and standards in the Internet. CO-2. Describe the TCP/IP protocol suite. CO-3. Defining subnetting and supernetting. CO-4. Explain error reporting and query mechanism in the Internet. CO-5. Describe process-to-process communication (UDP, TCP, and SCTP).
Semester- VI
Subject and code: - Web Technologies - G505DC7.6
Course Outcomes:
CO1: Understand basics of web technology CO2: Recognize the different Client-side Technologies and tools like, HTML, CSS, JavaScript CO3: Learn Java Servlets and JDBC CO4: Web Technology for Mobiles and Understand web security
Subject and code: - Web Technologies Lab – Java Script, HTMS, CSS Lab - G505DC7.6P
Course Outcomes:
CO1: Understand basics of web technology CO2: Recognize the different Client-side Technologies and tools like, HTML, CSS, JavaScript CO3: Learn Java Servlets and JDBC CO4: Web Technology for Mobiles and Understand web security
Subject and code: Statistical Computing & R Programming G505DC 8.6
Course Outcomes:
CO1. Explore fundamentals of statistical analysis in R environment. CO2. Describe key terminologies, concepts and techniques employed in Statistical Analysis. CO3. Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems. CO4. Conduct and interpret a variety of Hypothesis Tests to aid Decision Making. CO5. Understand, Analyze, and Interpret Correlation Probability and Regression to analyze the underlying relationships between different variables.
Subject and code: Statistical Computing & R Programming Lab G505DC 8.6P
Course Outcomes:
CO1. Explore fundamentals of statistical analysis in R environment. CO2. Describe key terminologies, concepts and techniques employed in Statistical Analysis. CO3. Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems. CO4. Conduct and interpret a variety of Hypothesis Tests to aid Decision Making. CO5. Understand, Analyze, and Interpret Correlation Probability and Regression to analyze the underlying relationships between different variables.
INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 500P H B. Sc - STATISTICS
PROGRAMME OUTCOMES	
<p>PO-1. Develop and demonstrate an ability to understand major concepts in various disciplines of Statistics.</p> <p>PO-2. Solve analytical problems independently and draw logical conclusions.</p> <p>PO-3. Analyse, interpret the data and hence help policy makers to take a proper decision.</p> <p>PO-4. Have a knowledge regarding use of data analytics tools like Excel, SPSS, R programming and Python.</p> <p>PO-5. Use modern statistical techniques and statistical Software to understand the concepts of Statistics.</p> <p>PO-6. Think, acquire knowledge and skills through logical reasoning and inculcate the culture of self-learning.</p> <p>PO-7. Create an awareness about the impact of Statistics in real life and development outside the scientific community.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1: Understand and apply the principles of least squares to fit a model to the given data, study the association between the variables, applications of Probability Theory and Probability Distributions.</p> <p>PSO 2: Understand the concept of Sampling Distributions, study the applications of various probability inequalities and Central limit theorem. Apply the statistical inference to real life situations.</p> <p>PSO 3: Understand the principles and applications of Total Quality Management, Designs of Experiment, Sampling theory, Regression Model, Simulation and Operation Research.</p> <p>PSO 4: Understand the applications of various Statistical Techniques, use of Statistical tools through Excel</p>	
Semester- I	
Subject and code : Descriptive Statistics - G 506 DC1.1	
Course Outcomes:	

- CO-1. Understand the principle of least squares, fitting of various types of curves and the concept of correlation and its applications.
- CO-2. Explain the theory behind Regression analysis and its applications.
- CO-3. Have complete knowledge of demand analysis with the law of demand and supply, Engel's curves and Pareto's law of income distribution.
- CO-4. Understand probability density function, mean and variance of a random variable and the theorems of probabilities with their applications.

Subject and code: Descriptive Statistics Practical - G 506 DC2.1 P

Course Outcomes:

- CO-1. Analyse the data through correlation and regression analysis.
Understand the applications of mathematical expectation.
- CO-2. Understand the concept of demand analysis with practical examples.
- CO-3. Find the mean and variance of the given random variable.

Subject and code: Statistical Methods - G 506 OE1.1

Course Outcomes:

- CO1. Acquire knowledge of statistical methods.
- CO2. Identify types of data and visualization, analysis and interpretation.
- CO3. Know about elementary probability and probability models.
- CO4. Employ suitable test procedures for the given data set.

Semester- II

Subject and code: Probability Distributions - G 506 DC1.2

Course Outcomes:

- CO-1. Understand the concept of mathematical expectation and its properties.
- CO-2. Have complete knowledge about standard discrete distributions and its applications.
- CO-3. Explain the various continuous probability distributions with mean, variance median, MGF and its applications.
- CO-4: Understand the theory of distribution functions of random variables using mgf and Jacobian transformation.

Subject and code: Probability Distributions Practical - G 506 DC2.2 P

Course Outcomes:

- CO-1. Understand the applications of mathematical expectation.
- CO-2. Identify, relate and differentiate probability distributions and apply them in day to day life.
- CO-3. Have the ability to fit a probability distribution to the given data.

Subject and code : Applied Statistics - G 506 OE1.2

Course Outcomes:

- CO-1. Understand the applications of Vital events, Life table in government policies and planning.
- CO-2. Apply the Statistical tools like Index Numbers and Time Series for real life

situations.
Semester- III
Subject and code: Calculus and Probability Distributions - G 506 DC1.3
Course Outcomes:
CO-1. Understand the concept of mathematical expectation and its properties.
CO-2. Have complete knowledge about standard discrete distributions and its applications.
CO-3. Explain the various continuous probability distributions with mean, variance median, MGF and its applications.
CO-4: Understand the theory of distribution functions of random variables using mgf and Jacobian transformation.
Subject and code: Calculus and Probability Distributions Practical - G 506 DC2.3 P
Course Outcomes:
CO-1. Understand the applications of mathematical expectation.
CO-2. Identify, relate and differentiate probability distributions and apply them in day to day life.
CO-3. Have the ability to fit a probability distribution to the given data.
Subject and code: Biostatistics - G 506 OE1.3
Course Outcomes:
CO1: To enable the students to identify the variables of biological studies and explore the tools of classification and presentation.
CO2: To study the probability notion, models and their applications in the study of biological phenomenon.
CO3: To acquire knowledge on sampling distribution and testing of hypotheses.
Semester- IV
Subject and code: Statistical Inference-I - G 506 DC1.4
Course Outcomes:
CO-1. Understand the applications of probability inequalities, central theorem and WLLN.
CO-2. Understand the applications of methods of point estimation.
CO-3. Apply the theory of interval estimation to real life.
Subject and code: Statistical Inference-I Practical - G 506 DC2.4 P
Course Outcomes:
CO-1. Understand the applications of probability inequalities, central theorem and WLLN.
CO-2. Understand the applications of methods of point estimation.

CO-3. Apply the theory of interval estimation to real life.

Semester- V

Subject and code: Matrix algebra and Regression Analysis - G 506 DC1.5

Course Outcomes:

- CO1. Demonstrate and understanding of basic concepts of matrix algebra, including determinants, inverse and properties of various types of matrices.
- CO2. Apply matrix algebra and linear algebra techniques to solve systems of linear equations, determine the rank of matrix, understanding quadratic forms and their applications in statistics, characteristic roots and vectors.
- CO3. Develop and understanding of simple and multiple regression models, including the assumptions underlying these models, techniques for inference and hypothesis testing and diagnostics checks and corrections.
- CO4. Apply regression analysis techniques to real world data sets.

Subject and code: Practicals - G 506 DC2.5P

Course Outcomes:

- CO1. Demonstrate and understanding of basic concepts of matrix algebra, including determinants, inverse and properties of various types of matrices.
- CO2. Apply matrix algebra and linear algebra techniques to solve systems of linear equations, determine the rank of matrix, understanding quadratic forms and their applications in statistics, characteristic roots and vectors.
- CO3. Develop and understanding of simple and multiple regression models, including the assumptions underlying these models, techniques for inference and hypothesis testing and diagnostics checks and corrections.
- CO4. Apply regression analysis techniques to real world data sets.

Subject and code: Analysis of variance and Design of experiments - G 506 DC3.5

Course Outcomes:

- CO1. Learn fixed and random effect models and one-way and two-way classified data.
- CO2. Understand different designs (CRD, RBD, LSD) and missing plot techniques.
- CO3. Understand the different factorial experiments.
- CO4. Develop complete and partial confounding for factorial experiments.

Subject and code : Practical - G 506 DC4.5P

Course Outcomes:

- CO1. Learn fixed and random effect models and one-way and two-way classified data.
- CO2. Understand different designs (CRD, RBD, LSD) and missing plot techniques.
- CO3. Understand the different factorial experiments.
- CO4. Develop complete and partial confounding for factorial experiments.

Subject and code : Operations Research (Theory)

Course Outcomes:

- CO1. Formulate a linear programming problem and solve it using graphical, simplex methods. conceptualize the feasible region and to find out feasible solution.
- CO2. Solve transportation and assignment problems and give the optimal solution.

CO3. Solve game problems using different techniques.
 CO4. Describe an inventory system, simple inventory models and obtain mathematical solutions.
 CO5. Understand Need for replacement. Replacement policy for items which deteriorate with time. Group replacement policy
 CO6. Understand a queueing system and its different components; derive the characteristics of a single server queue.

Subject and code : Demography and Vital statistics (Theory)

Course Outcomes:

CO1. acquire knowledge about the size, composition, organization and distribution of the population.
 CO2. perform basic demographic analysis using various techniques.
 CO3. study the trend of population growth which describes the past evolution, present distribution and future changes in the population of an area.
 CO4. acquire knowledge about the construction of life table and its applications in demographic analysis.

Semester- VI

Subject and code: Statistical Inference-II (Theory) - G 506 DC1.6

Course Outcomes:

CO1. Understand expected loss, decision rules, decision principles and Bayes and minimax decision rule.
 CO2. Learn about UMP test, MLR property and Likelihood ratio tests.
 CO3. Explore about sequential inference.
 CO4. Learn about one sample and two sample nonparametric tests.

Subject and code: Practical - G 506 DC2.6P

Course Outcomes:

CO1. Understand expected loss, decision rules, decision principles and Bayes and minimax decision rule.
 CO2. Learn about UMP test, MLR property and Likelihood ratio tests.
 CO3. Explore about sequential inference.
 CO4. Learn about one sample and two sample nonparametric tests.

Subject and code: Sampling Theory and Development Statistics - G 506 DC3.6

Course Outcomes

CO1. Understand the principles underlying sampling as a means of making inferences about a population.
 CO2. Understand the difference between probability and nonprobability sampling.
 CO3. Understand different sampling techniques.
 CO4. To learn to estimate population parameters from a sample.
 CO5. Understand official statistical system in India and their functions. CO6. Understand the

role statistics in national development.

Subject and code: Practical - G 506 DC4.6 P

Course Outcomes

CO1. Understand the principles underlying sampling as a means of making inferences about population.
CO2. Understand the difference between probability and nonprobability sampling.
CO3. Understand different sampling techniques.
CO4. To learn to estimate population parameters from a sample.
CO5. Understand official statistical system in India and their functions.CO6. Understand the role statistics in national development.

Subject and code : Econometrics (Theory) –

Course Outcomes

CO1. Model economic phenomena and estimate the model.
CO2. Understand use of simple and multiple linear regression models.
CO3. Know the impact of violations of assumptions of regression models.
CO4. Model the economic phenomena with more than equations and their estimation.

Subject and code : Statistical Quality Control (Theory)-

Course Outcomes

CO1: Learn about process control and product control, different limits and causes of variation.
CO2: Understand control chart for variables and process capability.
CO3: Understand lot acceptance sampling and sampling plans.

Subject and code : Reliability Analysis (Theory)

Course Outcomes

CO1. Find reliabilities of various models of mechanical units (industry), biological science, health science, finance.
CO2.Understand impact of age on functioning of systems.
CO3. Know impact of configuration of sub-assemblies on performance CO4. Evaluate and analyse reliabilities of models.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 500P I B. Sc - ELECTRONICS
PROGRAMME OUTCOMES	
<p>PO-1. Ability to apply knowledge of Logic thinking and basic science for solving related problems</p> <p>PO2: Ability to perform experiments, as well as to analyse and interpret data.</p> <p>PO3: Ability to design and manage electronic systems or processes that conforms to a given specification within ethical and economic constraints.</p> <p>PO4: Ability to identify, formulate, solve and analyze the problems in various sub disciplines of Science.</p> <p>PO5: Ability to use Modern Tools / Techniques.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO1: Provide students with learning experiences that develop broad knowledge and understanding of key concepts of and equip students with advanced scientific / technological capabilities for analyzing and tackling the issues and problems in the field of.</p> <p>PSO2: Develop ability in students to apply knowledge and skills they have acquired to solve specific theoretical and applied problems in by providing hands on experience.</p> <p>PSO3: Develop abilities in students to design and develop innovative solutions for benefits of society.</p> <p>PSO4: Provide students with skills that enable them to get employment in industries or pursue Higher studies or research assignments or turn as entrepreneurs.</p>	
Semester- I	
Subject and code : Electronic Devices and Circuits - G 504 DC1.1	
Course Outcomes:	
<p>CO1: Study and analyze basic networks using network theorems in systematic manner.</p> <p>CO2: Build simple electronic circuits used in various applications.</p> <p>Co3: Describe the behaviour of basic semiconductor devices</p> <p>CO4: Reproduce the I-V characteristics of diode/BJT devices</p> <p>CO5: Explain the behaviour, characteristics and applications of Varactor diode, LED, Zener diodes.</p> <p>CO6: apply standard device models to explain/calculate critical internal parameters of semiconductor devices.</p> <p>CO7: Understand and represent numbers in powers of base and converting one from the other, carry out simple arithmetic operations.</p> <p>CO8: Understand the basic knowledge of Digital system building blocks, effectively can construct simple digital designs with the knowledge of Boolean algebra.</p>	

Subject and code: : PRACTICALS – I - G 504 DC2.1P
Course Outcomes:
CO-1. C07: Understand and represent numbers in powers of base and converting one from the other, carry out simple arithmetic operations. CO8: Understand the basic knowledge of Digital system building blocks, effectively can construct simple digital designs with the knowledge of Boolean algebra.
Subject and code: BASICS OF ELECTRONIC CIRCUITS AND PCB DESIGN - G 504 OE1.1 (OPEN ELECTIVE1)
Course Outcomes:
CO1. Acquire knowledge of statistical methods. CO2. Identify types of data and visualization, analysis and interpretation. CO3. Know about elementary probability and probability models. CO4. Employ suitable test procedures for the given data set.
Subject and code: Domestic Equipment maintenance - G504 OE 1.2
Course Outcomes:
CO1: Aptitude to apply Logic thinking and Basic Science knowledge for problem solving in various fields of electronics both in industries and research. CO2: To acquire experimental skills, analyzing the results and interpret data. CO3: Ability to design / develop / manage /operation and maintenance of sophisticated electronic gadgets /Systems / processes that conforms to a given specification within ethical and economic constraints. CO4: Capacity to identify and implementation of the formula to solve the electronic related issues and analyze the problems in various sub disciplines of electronics. CO5: Capability to use the Modern Tools / Techniques for the operation and maintenance of the domestic electrical / electronic gadgets CO6: Capability to use the Modern Tools/ Techniques.
Semester- II
Subject and code: ANALOG AND DIGITAL CIRCUITS - G 504DC1.2
Course Outcomes:
CO1: design suitable biasing circuit to a transistor for specific application. CO2: explain performance parameters of any amplifier CO3: understand and appreciate the Fabrication of ICs CO4: understand the Fundamentals of Operational Amplifiers. CO5: interpret the experimental data for better understanding the ICs. CO6: understand linear and nonlinear applications of operational amplifiers. CO7: Analyze combinatorial and sequential circuits CO8: understands and interprets parameters of various Logic families
Subject and code: Practical G 504 DC2.2P
Course Outcomes:

CO1: design suitable biasing circuit to a transistor for specific application.
 CO2: explain performance parameters of any amplifier
 CO3: understand and appreciate the Fabrication of ICs
 CO4: understand the Fundamentals of Operational Amplifiers.
 CO5: interpret the experimental data for better understanding the ICs.
 CO6: understand linear and nonlinear applications of operational amplifiers.
 CO7: Analyze combinatorial and sequential circuits
 CO8: understands and interprets parameters of various Logic families

Subject and code : Fundamentals of Digital Electronics - G 504 OE 1.2

Course Outcomes:

CO-1. Define basic properties of digital electronics.
 CO-2. Study the laws of Boolean algebra.
 CO-3. Acquire knowledge of Addition, multiplication and division in binary systems .

Subject and code : Electronics For Everyone - G504 OE 2.2

Course Outcomes:

CO1: Aptitude to apply Logic thinking and Basic Science knowledge for problem solving in various fields of electronics both in industries and research.
 CO2: To acquire experimental skills, analyzing the results and interpret data.
 CO3: Ability to design / develop/ manage/ operation and maintenance of sophisticated electronic gadgets / systems / processes that conforms to a given specification within ethical and economic constraints.
 CO4: Capacity to identify and implementation of the formula to solve the electronic related issues and analyze the problems in various sub disciplines of electronics.
 CO5: Capability to use the Modern Tools/ Techniques.

Semester- III

Subject and code: POWER CONTROL, OSCILLATORS, WAVE SHAPING CIRCUITS, PRINCIPLES OF RADIO COMMUNICATION AND DIGITAL CIRCUITS - G 504 DC1.3

Course Outcomes:

CO1: Know the basic concept of breakdown devices.
 CO2: Understand the principles Oscillators.
 CO3: Analyse any wave shaping circuit.
 CO4: Understand the working of various types of Computer memories.
 CO5. Analyse the working of various memory organization.
 CO6. Understand the principles of Radio Communications.

CO7: Familiar with “AM” and “FM “techniques.

CO8: Understand Registers and Counters

Subject and code: PRACTICAL III - G504 DC 2.3P

Course Outcomes:

CO1: Know the basic concept of breakdown devices.

CO2: Understand the principles Oscillators.

CO3: Analyse any wave shaping circuit.

CO4: Understand the working of various types of Computer memories.

CO5. Analyse the working of various memory organization.

CO6. Understand the principles of Radio Communications.

CO7: Familiar with “AM” and “FM “techniques.

CO8: Understand Registers and Counters

Subject and code : Principles of Electronic Communication systems
G504 OE 1.3

Course Outcomes:

CO1: The history and development of Electronic communication system

CO2: different channels of signal propagation in electronic communication systems

CO3: working principles of common communication systems like Radio, television and cell phones

CO4: principles of digital communication-mobile communication, internet and social media

Subject and code : Medical Electronics - G504 OE 2.3

Course Outcomes:

CO1: Study the basics of medical electronics

CO2: Study the practical applications of medical electronics

Semester- IV

Subject and code: Electronic Communications, Microprocessors and Digital Design using Verilog - G 504 DC1.4

Course Outcomes:

CO1: The history and development of Electronic communication system

CO2: different channels of signal propagation in electronic communication systems

CO3: working principles of common communication systems like Radio, television and cell phones

CO4: principles of digital communication-mobile communication, internet and social media

CO5: Knows principles of data storage using various memory devices.

CO6: Knows the fundamentals of microprocessors.

Subject and code: Practicals – IV - G 504DC2.4P

Course Outcomes:

- CO1: The history and development of Electronic communication system
- CO2: different channels of signal propagation in electronic communication systems
- CO3: working principles of common communication systems like Radio, television and cell phones
- CO4: principles of digital communication-mobile communication, internet and social media
- CO5: Knows principles of data storage using various memory devices.
- CO6: Knows the fundamentals of digital computer and its architecture.

Semester- V

Subject and code: Electronic Communication Systems G 504 DC1.5

Course Outcomes:

- CO1: The history and development of Electronic communication system, various types of Electronic communication system and their areas of application, different channels of signal propagation in electronic communication systems
- CO2: Concept, theory and circuits of various techniques of modulation.
- CO3: the mechanism of signal transmission in different media the basics of analog transmission and digital transmission
- CO4: working principles of common communication systems like Radio, television and cell phones
- CO5: the elements of satellite communication systems
- CO6: Elements of wireless communication and fibre optic communication systems principles of digital communication-mobile communication, internet and social media.

Subject and code: PRACTICALS V - G 504 DC 2.5P

Course Outcomes:

- CO1: Analyze and relate the working of Opto-electronic devices.
- CO2: Understand and relate the characteristics of optical fibers and their simple applications,
- CO3: Write programs in microcontrollers using the instruction set, code and execute the program.

Subject and code: 8051 and PIC Microcontrollers - G 504DC 3.5

Course Outcomes:

- CO1: understand the architecture of microcontrollers.
- CO2: understand their instruction set and write simple programs in them
- CO3: Know the application of microcontrollers in various fields
- CO4: understand the architecture of any microcontroller,
- CO5: Understand the architecture of PIC
- CO6: Understand the connection of interfacing units

Subject and code: PRACTICALS-VI - G504 DC 4.5P

Course Outcomes:

- CO1: Write programs in microcontrollers using the instruction set, code and execute

the program.
CO2: To write and execute programs by writing assembly/C programs using KeilµVision IDE for 8051/8051-kit.
CO3: To write and execute programs using interfaces.
Semester- VI
Subject and code: – Transducers, Sensor networks and principles of IOT and 5G communications - PAPER – VII G504DC 1.6
Course Outcomes:
CO1: Know the difference between Transducers and Sensors. CO2: understand various types of ADC and DAC . CO3: Able to design and verify the functionality of Internet of Things(IoT) CO4: Know different types of protocols of Internet of Things (IoT).
Subject and code: PRACTICAL VII: GUIDED PROJECT - G504DC2.6P
Course Outcomes:
CO1: Know the difference between Transducers and Sensors. CO2: understand various types of ADC and DAC . CO3: Able to design and verify the functionality of Internet of Things(IoT) CO4: Know different types of protocols of Internet of Things (IoT).
Subject and code: C Language & signals and systems - 504 DC 3.6
Course Outcomes:
CO1. To understand various features and structures of high level languages CO2. To understand various data types, memory allocation and their declaration CO3. To understand various operators and their application CO4 Modular and structured programming techniques in C language CO5. To learn the various branch instructions, loop instructions and arrays CO6. Write and execute and debug C codes for solving problems. CO7: Know characteristics of signal, classification and signal and system relationship CO8: To understand and appreciate examples for signals and systems
Subject and code: PRACTICAL VIII - G504 DC 4.6P
Course Outcomes:
CO1. To understand various features and structures of high level languages CO2. To understand various data types, memory allocation and their declaration CO3. To understand various operators and their application CO4 Modular and structured programming techniques in C language CO5: To learn the various branch instructions, loop instructions and arrays CO6: Write and execute and debug C codes for solving problems. CO7: Know characteristics of signal, classification and signal and system relationship CO8: To understand and appreciate examples for signals and systems

Department Name:	G 500P J B.Sc. ECONOMICS
-------------------------	---------------------------------

PROGRAMME OUTCOMES
<p>PO 1: Facilitate the understanding of basic economic theories.</p> <p>PO 2: A comprehensive understanding of the various courses in the discipline.</p> <p>PO 3: Enable to apply quantitative techniques suitable for the discipline.</p> <p>PO 4: Analyse the policies of the government in solving economic problems.</p> <p>PO 5: Develop skills required to blend the subject learned and the real life situations.</p> <p>PO 6: Able to evaluate the working of the economy, its interconnection with the social, political, cultural, environmental, ethical issues in a comprehensive manner.</p>
PROGRAMME SPECIFIC OUTCOMES
<p>PSO 1: Enable the students with the knowledge of Economics both theoretical and applied.</p> <p>PSO 2: Develop a comprehensive understanding of the various aspects of the branches of Economics related to micro and macro aspects.</p> <p>PSO 3: Understand the working of the domestic and foreign economy.</p> <p>PSO 4: Enable the students to apply the theoretical knowledge of Economics in applying to the real-life situations.</p> <p>PSO 5: Analyse the issues related to various problems like unemployment, balance of payments, poverty, inequality, inflation facing the economy.</p> <p>PSO 6: Develop skills to integrate and organise the inter linkages between and among the varied divisions of the economy.</p> <p>PSO 7: Have a critical assessment of the working of the economy, the interconnections between the various sectors and the policies linked to the development.</p>
Semester- I
Subject and code: MICRO ECONOMICS I - G 513 DC1.1
Course Outcomes:
<p>CO1: Analyse the economic behaviour of the consumer and the firm.</p> <p>CO2.: Explain the relationship between various variables such as Input and output, cost and output, price of the product and quantity demand.</p> <p>CO3. Product and Factor pricing under different market structure..</p>
Subject and code: MATHEMATICS FOR ECONOMICS - G 513 DC2.1
Course Outcomes:
<p>CO 1: Perform basic operations in Vectors and Matrix algebra.</p> <p>CO2. Calculate limits, derivatives and integrals of functions of multiple variables.</p> <p>CO3. Calculate Optima for constrained and unconstrained optimization problems encountered in Economics..</p>
Subject and code: DEVELOPMENT STUDIES - G 513 OE1.1
Course Outcomes:
<p>CO1 : Students will develop a critical understanding of the contemporary issues in Indian economic development.</p> <p>CO2: Students will thus be better prepared to face the professional world and can use this knowledge base in a variety of jobs, including in the corporate,</p>

Semester- II
Subject and code: MACRO ECONOMICS I - G 513 DC1.2:
Course Outcomes:
CO1: Explain the concept of National Income and methods of its estimation CO2: Analyse the relationship between Macroeconomic variables CO3: Understand the determination of income and employment under Classical and Keynesian framework
Subject and code : STATISTICS FOR ECONOMICS - G 513 DC 2.2:
Course Outcomes:
CO1: Calculate basic descriptive and inferential statistics. CO2. Interpret descriptive and inferential statistics. CO3. Explain the process of hypothesis testing.
Subject and code: Economics of Business Environment - G 513 OE 1.2:
Course Outcomes:
CO 1: Explain the elements of Business environment. CO 2: Identify the environmental constraints in the growth of a business firm. CO 3: Analyze the ways to utilise the current environmental conditions to achieve higher business growth.
Semester- III
Subject and code: Micro Economics II - G 513 DC 1.3:
Course Outcomes:
CO 1: Identify the facets of an economic problem. CO 2: Learn basic economic concepts and terms. CO 3: Explain the operation of a market system. CO 4: Analyse the production and cost relationship of a business firm. CO 5: Evaluate the market decisions under different structure. CO 6: Use basic cost benefit calculations as a means of decision making.
Subject and code: BASIC ECONOMETRICS - G 513 DC 2.3:
Course Outcomes:
CO 1 To know the basic knowledge of Econometrics. CO2 To understand the concepts like multicollinearity, heteroscedasticity, Autocorrelation and their applications. CO3 Helps the students to solve analytical problems related to regression.
Subject and code: Economics of Insurance - G 513 OE 1.3:
Course Outcomes:
CO 1: Understand various types of Insurance CO 2: Understand various risks and Benefits of Insurance
Semester- IV
Subject and code: Macro Economics - G 513 DC1.4:

Course Outcomes:
CO1: On successful completion of the course the student is expected to get CO2: a thorough understanding of the various theories behind pricing of products and factors in different market environment. CO3: Ability to identify and evaluate the main models of market structures and to appreciate the theories behind policy prescriptions. CO4: This course in Macroeconomics is expected to develop skill in economic reasoning. By the time, students complete this course, they would know the relevance of government decisions like Wage policy, monetary policy, the RBI policy, etc. in the day-to-day life.
Subject and code: APPLIED ECONOMETRICS - G 513 DC 2.4:
Course Outcomes:
CO1: To know the basic knowledge of Econometrics. CO2: To understand the dynamic econometric models. CO3: Helps to improve analytical skills..
Subject and code: Entrepreneurial Economics - G 513 OE 1.4:
Course Outcomes:
CO1: Understand various concepts of entrepreneurship CO2: Absorb Skills of entrepreneurship CO3: Understand various sources of financing project
Semester- V
Subject and code: Public Economics - G 513 D C1.5
Course Outcomes:
CO1. Understand introductory Public Finance concepts. CO2. Study the causes of market failure and corrective actions CO3. Understand the impact, incidence and shifting of tax CO4. Study the Economic Effects of tax on production, distribution and other effects CO5. Enable the students to know the Principles and Effects of Public Expenditure CO6. Understand the Economic and functional classification of the budget; Balanced and Unbalanced budget CO7. Understand the Burden of Public debt and know the Classical/ Ricardian views, Keynesian and post-Keynesian views CO8. To acquaint with the advantages and disadvantages of Deficit Financing
Subject and code: DEVELOPMENT ECONOMICS - G 513 D C2.5
Course Outcomes:
CO1. Understand the basic concepts and measurements of Development. CO2. Learn some classical and partial theories of Development economics and identify the difference. CO3. Identify the difference between Developed and Developing Countries. CO4. Analyse and tackle the Development issues effectively.
Subject and code: Introduction to R Software - G 513 DC3.5
Course Outcomes:

CO1. Enables to do programming in R
CO2. Students can able to gain skill in analysing the data.
CO3. To acquaint with the recent advances in R

Subject and code: Indian Banking and Finance - G 513 D C4.5

Course Outcomes:

CO1. Understand the structure of Indian banking and the role of banks in monetary policy.
CO2. Analyze the functioning of banks and different types of accounts and other services offered by banks.
CO3. Evaluate recent developments in the Indian banking sector, including digital banking, payment banks, and non-performing assets.
CO4. Describe the overview of the Indian financial system, including financial markets, financial instruments, and financial regulation.
CO5. Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy.
CO6. Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.

Semester- VI

Subject and code: Actuarial Economics - G 513 DC1.6

Course Outcomes:

CO1. Enables understanding on Actuarial Economics and Insurance sector.
CO 2. To acquaint with advances in financial models

Subject and code: International Economics - G 513 DC2.6

Course Outcomes:

CO1. Understand the international trade theories and their application in international trade
CO2. Explain the concept of terms of trade and demonstrate the effect of trade barriers; and display the ability to analyse the stages of economic integration
CO3. Understand the concept of BoP and assess the BoP position and examine the changes in forex rate
CO4. Analyse the role of International trade and financial institutions
CO5. Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues

Subject and code: Environmental Economics - G 513 DC3.6

Course Outcomes:

CO1. Understand how economic methods can be applied to environmental issues facing society
CO2. Examine the linkages between Environmental Degradation and Economic Development
CO3. Develop an informed view regarding the potential of economics to help societies achieve their environmental goals
CO4. Demonstrate good inter-personal and communication skills through writing an essay

and contributing to critical discussion

CO5. Analyze environmental problems and to assess environmental policies

Subject and code: Indian Public Finance - G 513 DC4.6

Course Outcomes:

CO1. Understand the structure of Indian Public Finance

CO2. Enable the students to know the Source and nature of public revenue and expenditure

CO3. Understand the Budget and different concept of deficits

CO4. Know the Public debt and its management

CO5. Understand the fiscal and monetary policy and their tools and importance

CO7. To enable the students to know the Indian federal financing system and Financial Commissions

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:

G 500B A B.Sc. BIOCHEMISTRY

PROGRAMME OUTCOMES

PO 1 To create interest in Biochemistry and appreciation for chemical basis of biological processes.

PO2 To inculcate the spirit of inquiry and value of systematic study of a discipline. Provides general understanding of the related disciplines with a holistic knowledge generation in biological sciences.

PO3 To provide an in-depth understanding of chemical reaction mechanisms in biological processes.

PO4 To provide a flavor of historical developments of enzymes and their applications in research, diagnostics and various industries.

PO5 Gain proficiency in basic laboratory techniques and be able to apply the scientific method to the processes of experimentation, hypothesis testing, data interpretation and logical conclusions.

PO6 Develop problem solving and analytical skills through case studies, research papers and hands-on-experience

PO7 To appreciate biochemical mechanistic basis of physiological processes, metabolism under normal and pathological conditions importance and levels of metabolic regulations.

PO8 To apply and effectively communicate scientific reasoning and data analysis in both written and oral forms. They will be able to communicate effectively with well-designed posters and slides in talks aimed at scientific audiences as well as the general public.

PO9 To bridge the knowledge and skill gap between academic out and industry requirements.

PO10 To give students experience in conducting independent, hypothesis- driven, biological research, project planning and management

PO 11 To provide skills to publish research findings, and awareness of IP rights, and scientific publication ethics and problems of plagiarism.

PO 12 : To prepare competent human resource with better knowledge, hands-on-experience and scientific attitude, at national and global levels for careers in research and development, academia and Pharma-, biotech- and agro-, and food processing industries.

PROGRAMME SPECIFIC OUTCOMES

PSO.1: Describe the chemical structures, properties, and biological functions of the molecules which make up living matter: water, amino acids and proteins, nucleic acids, carbohydrates, and lipids.

PSO.2: Describe methods to study the structures of these molecules and to synthesize them.

PSO.3• Describe the mechanisms by which the structures of proteins determine their functions and by which their functions are regulated.

PSO.4: Explain how enzymes function in terms of thermodynamics, transition states, and kinetics. Perform calculations involving various kinetic parameters, including K_M and V_{max} .

PSO.5: Contrast the effects of different types of inhibitors on enzymes and on their kinetic parameters.

PSO.6: Describe the mechanisms of action of selected enzymes and the experimental evidence for these mechanisms.

PSO.7: Explain how enzyme activity is regulated by various means.

PSO.8: Define thermodynamic parameters, including free energy, entropy and reduction potentials. Perform calculations involving them.

PSO.9: Discuss the role of ATP in the thermodynamics of metabolism.

PSO.10: Describe the metabolic roles of NADH, NADPH, FADH₂, coenzyme A, water & fat soluble vitamins and ribonucleotides.

PSO.11: Name and describe the molecules which participate in selected metabolic pathways, such as glycolysis, citric acid cycle, and gluconeogenesis. Discuss the enzymes and cofactors catalyzing each transformation in these metabolic pathways and the controls on the pathways studied.

PSO.12: Summarize the pathways providing monosaccharides for glycolysis, emphasizing the interacting controls of these processes.

PSO.13: Explain DNA replication, transcription, translation, DNA recombination and DNA damages

PSO.14: Summarizes DNA mutation and cancer, radiotherapy.

PSO.15: Describe basics in microbiology and immunology

PSO.16: Demonstrate techniques in microbiology, immunology and cell biology.

Semester- I

Subject and code: Chemical Foundations Of Biochemistry – I

G 510 DC 1.1

Course Outcomes:

CO1: This will inculcate confidence and clarity of mind in students to understand the chemistry of Biomolecules and Biological reactions

Subject and code: Volumetric analysis & Estimations –Practical-I

G 510 DC 2.1P

Course Outcomes:

CO1: To familiarize students with the principles of analytical chemistry and basic analytical techniques such as volumetric analysis.

CO2: To provide experimental practice of quantitative volumetric analysis.

CO3: To make solutions of various molar, normal concentrations and determine the amount of a substance in a given sample.

Subject and code: BIOCHEMISTRY OF CELL

G 510 OE 1.2

Course Outcomes:

CO1: This open elective course offering to students of various streams gives knowledge about biomolecules in their cellular environment.

CO2: Further, they will learn basic chemistry of amino acids, peptides, sugars, polysaccharides, nucleosides, nucleotides, nucleic acids, lipids, vitamins, coenzymes and metal ions.

Semester- II

Subject and code: Chemical Foundations Of Biochemistry – II**G 510 DC 1.2****Course Outcomes:**

CO1: These topics will enable students to understand the fundamentals of chemical processes in biological systems.

Subject and code : Qualitative and Quantitative Analysis Practicals – II**G 510 DC 2.2P****Course Outcomes:**

CO 1: The Course Objective is to provide experimental practice of quantitative and qualitative analysis.

CO2: Also it provides training in physical chemistry laboratory techniques.

CO3: Upon successful completion, students should develop skills in handling instruments and understand its application in research work..

Subject and code: PROTEINS AND ENZYMES - G 510 OE 1.2:**Course Outcomes:**

CO 1: Proteins: The course aims to introduce proteins and their importance to modern Biochemistry, highlighting their structural features and unique characteristics that help them participate in every physiological process in life.

CO2: Enzymes: The objective of this course is to integrate the practical aspects of enzymology with the kinetic theories to provide a mechanistic over view of enzyme activity and regulation in the cell.

CO3: To prepare students to confidently and competently work with enzyme systems in both Academia and industry.

Semester- III**Subject and code: BIO-ORGANIC CHEMISTRY - G 510 DC1. 3:****Course Outcomes:**

CO 1 :These topics will enable students to understand the fundamentals of organic chemistry pertinent to their importance in understanding biochemical reactions.

Subject and code: BIOORGANIC CHEMISTRY -3 PRACTICALS**G 510 DC 2.3P:****Course Outcomes:**

CO 1 :This course aims to familiarize students with the principles of organic chemistry and basic qualitative analysis of organic compounds.

CO2: Course objective is to provide experimental practice of preparation of organic compounds and extraction of biologically important compounds.

Subject and code: BIOCHEMICAL TECHNIQUES**G 510 OE 1.3:****Course Outcomes:**

Co1: Demonstrate the ability to use discipline specific research techniques.

CO2: Analyze and interpret data and scientific literature. Synthesize data and draw appropriate inferences.

Semester- IV

Subject and code: ANALYTICAL BIOCHEMISTRY - G 510 DC1.4

Course Outcomes:

CO 1: These topics will enable students to develop competence in handling various chromatographic, electrophoretic and isotopic techniques and apply them in isolating and characterizing different biological molecules.

**Subject and code: Analytical Biochemistry – IV Practicals-
G 510 DC 2.4P:**

Course Outcomes:

CO 1: Sourcing and handling biological samples.
CO2: Develop skill and proficiency in basic techniques
CO3: Centrifugation
CO4: Chromatography
CO5: Electrophoresis and
CO6: Spectroscopy

Subject and code: PLANT BIOCHEMISTRY - G 510 OE 1.4:

Course Outcomes:

CO1: Understand the plant cell, photosynthesis, transporters, and important primary metabolites.
CO2: Illustrate plant growth regulators, plant's responses to various biotic and abiotic stresses.
CO3: Explain about plant secondary metabolites and their functional importance.

Semester- V

Subject and code: BIOCHEMISTRY OF MACROMOLECULES - G 510 DC1.5

Course Outcomes:

CO.1 The course provides fundamental insights on the types of macromolecules; and unique structural features, chemical properties and biological importance of each.

**Subject and code: QUALITATIVE ANALYSIS OF MACROMOLECULES
Practical– G510 DC 2.5P**

Course Outcomes:

CO1: The practical course will enable the students to learn the principles of reactions pertaining to different macromolecules. They will be able to qualitatively identify the presence of specific macromolecules or amino acids when provided with solution of a mixture of biomolecules.

**Subject and code: HUMAN PHYSIOLOGY AND ENZYMOLOGY –
G510 DC 3.5**

Course Outcomes:

CO1: Describe cell structure and functions, how cells form and divide, and how they differentiate and specialize.

CO2: Students will be able to describe the cyclical events of cell division and types of cell divisions. Student's knowledge with regard to the process of cell death and cell aging will enhance to its core.

CO3: Physiology involves the study of how living systems function, from the molecular and cellular level to the system level, and emphasizes an integrative approach to studying the biological functions of the human body.

CO4: Enzymology topics will enable students to describe structure, functions and the mechanism of action of enzymes. Learning kinetics of enzyme catalyzed reactions and enzyme inhibitions and regulatory process, Enzyme activity, Enzyme Units, Specific activity.

**Subject and code: HUMAN PHYSIOLOGY AND ENZYMOLOGY Practicals
G510 DC 4.5P**

Course Outcomes:

CO1: Describe cell structure and functions, how cells form and divide, and how they differentiate and specialize.

CO2: Students will be able to describe the cyclical events of cell division and types of cell divisions. Student's knowledge with regard to the process of cell death and cell aging will enhance to its core.

CO3: Physiology involves the study of how living systems function, from the molecular and cellular level to the system level, and emphasizes an integrative approach to studying the biological functions of the human body.

CO4: Enzymology topics will enable students to describe structure, functions and the mechanism of action of enzymes. Learning kinetics of enzyme catalyzed reactions and enzyme inhibitions and regulatory process, Enzyme activity, Enzyme Units, Specific activity.

Semester- VI

Subject and code: BIOENERGETICS AND METABOLISM - G 510 DC 1.6

Course Outcomes:

CO1: Understand the concepts of metabolism, characteristics of metabolic pathways and strategies used to study these pathways.

CO2: Gain a detailed knowledge of various catabolic and anabolic pathways and its regulation

CO3: Systematically learn the breakdown and synthesis of amino acids and nucleotides in humans and recognize its relevance with respect to nutrition and human diseases

CO4: Acknowledge the role of inhibitors of nucleotide metabolism which are potentially being used as chemotherapeutic drugs

CO5: Comprehend how the amino acid and nucleotide metabolism are integrated with carbohydrate and lipid metabolism

**Subject and code: BIOENERGETICS AND METABOLISM Practical
- G 510 DC 2.6P**

Course Outcomes:
CO1: The practical course will enable the students to learn the estimation of blood substances which tell how well the organs/kidneys are functioning, Blood urea nitrogen is a measure of how well the kidneys are working. CO2: Learning the structural levels of Nucleic acids.
Subject and code : MOLECULAR BIOLOGY AND IMMUNOLOGY – G 510DC 3.6
Course Outcomes:
CO1: the concept of immunology, concepts of antigen and antibody CO2: the immune system cells , Discuss active immunity and passive immunity the cellular immune mechanism
Subject and code : MOLECULAR BIOLOGY AND IMMUNOLOGY Practical – G 510DC 4.6P
Course Outcomes:
CO1: the concept of immunology, concepts of antigen and antibody CO2: the immune system cells , Discuss active immunity and passive immunity the cellular immune mechanism
INTERNSHIP:
<ul style="list-style-type: none"> ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills. ✓ To undertake experiential learning to improvise the technical and social skills. ✓ To build curriculum vitae and strengthen the work experiences

Department Name:	G 500B A B.Sc. ZOOLOGY
PROGRAMME OUTCOMES	
PO 1: The Programme offers both classical as well as modern concepts of Zoology in higher education.	
PO 2: It enables the students to study animal diversity in both local and global environments	
PO 3: To make the study of animals more interesting and relevant to human studies more emphasis is given to branches like behavioural biology, evolutionary biology and economic zoology.	
PO 4: More of upcoming areas in cell biology, genetics, molecular biology, biochemistry, genetic engineering and bioinformatics have been also included.	
PO 5: The lab courses provide the students necessary skills required for their employability. Equal importance is given to practical learning and presentation skills of students.	
PO 6: -Skill enhancement courses in classical and applied branches of Zoology enhance enterprising skills of students	

PROGRAMME SPECIFIC OUTCOMES
<p>PSO 1`To recognize the relationships between structure and function at different levels of biological organization (e.g., molecules, cells, organs, organisms, populations, and species) for the major groups of animals.</p> <p>PSO 2 Enable to understand how organisms function at the level of the gene, genome, cell, tissue, organ and organ-system. Drawing upon this knowledge, they are able to give specific examples of the physiological adaptations, development, reproduction and behaviour of different forms of life.</p> <p>PSO 3 To understand the applied biological sciences or economic Zoology such as sericulture, apiculture, aquaculture, Industrial microbiology, rDNA technology and medicine for their career opportunities.</p>
Semester- I
Subject and code: Cytology, Genetics and Infectious Diseases - G 508 DC 1.1
Course Outcomes:
<p>C01. The structure and function of the cell organelles.</p> <p>C02. The chromatin structure and its location.</p> <p>C03. The basic principle of life, how a cell divides leading to the growth of an Organism and also reproduces to form a new organism.</p> <p>C04. How a cell communicates with its neighbouring cells.</p> <p>C05:.. The principles of inheritance, Mendel 's laws and the deviations.</p> <p>C06:.. How environment plays an important role by interacting with genetic factors.</p> <p>C07:.. Detect chromosomal aberrations in humans and study of pedigree analysis</p>
Subject and code: Cytology, Genetics and Infectious Diseases Lab G 508. DC 1.1P
Course Outcomes:
<p>C01. The structure and function of the cell organelles.</p> <p>C02. The chromatin structure and its location.</p> <p>C03. The basic principle of life, how a cell divides leading to the growth of an Organism and also reproduces to form a new organism.</p> <p>C04. How a cell communicates with its neighbouring cells.</p> <p>C05:.. The principles of inheritance, Mendel 's laws and the deviations.</p> <p>C06:.. How environment plays an important role by interacting with genetic factors.</p> <p>C07:.. Detect chromosomal aberrations in humans and study of pedigree analysis</p>
Subject and code: Economic Zoology - G 508 OE 1.1
Course Outcomes:

- CO1. Gain knowledge about silkworms rearing and their products.
- CO2. Gain knowledge in Bee keeping equipment and apiary management.
- CO3. Acquaint knowledge on dairy animal management, the breeds and diseases of cattle and learn the testing of egg and milk quality.
- CO4. Acquaint knowledge about the culture techniques of fish and poultry.
- CO5. Acquaint the knowledge about basic procedure and methodology of vermiculture.
- CO6. Learn various concepts of lac cultivation.
- CO7. Students can start their own business i.e. self-employments.
- CO8. Get employment in different applied sectors

Semester- II

Subject and code: Biochemistry and Physiology - G 508 DC 1.2

Course Outcomes:

- CO1. To develop a deep understanding of structure of biomolecules like proteins, lipids and carbohydrates.
- CO 2. How simple molecules together form complex macromolecules.
- CO 3. To understand the thermodynamics of enzyme catalyzed reactions.
- CO 4. Mechanisms of energy production at cellular and molecular levels.
- CO 5. To understand various functional components of an organism.
- CO 6. To explore the complex network of these functional components.
- CO 7. To comprehend the regulatory mechanisms for maintenance of function in the body

Subject and code: Biochemistry and Physiology Lab - G 508 DC 1.2P

Course Outcomes:

- CO1 . To develop a deep understanding of structure of biomolecules like proteins, lipids and carbohydrates.
- CO 2. How simple molecules together form complex macromolecules.
- CO 3. To understand the thermodynamics of enzyme catalyzed reactions.
- CO 4. Mechanisms of energy production at cellular and molecular levels.
- CO 5. To understand various functional components of an organism.
- CO 6. To explore the complex network of these functional components.
- CO 7. To comprehend the regulatory mechanisms for maintenance of function in the body

Subject and code: Parasitology - G 508 OE 1.2:

Course Outcomes:

CO 1: Know the stages of the life cycles of the parasites and infective stages.
 CO2. Develop ecological model to know population dynamics of parasite, establishment of parasite population in host body, adaptive radiations and methods adopted by parasite to combat with the host immune system.
 CO3. Develop skills and realize significance of diagnosis of parasitic infection and treatment.
 CO4. Understand about diseases caused by Protozoa, Helminthes, Nematodes and Arthropods at molecular level.
 CO5. Develop their future career in medical sciences and related administrative services.

Semester- III

Subject and code: Molecular Biology, Bioinstrumentation and Techniques in Biology - G508DC2.3

Course Outcomes:

CO 1 : Describe the organization of macromolecules on membranes and cellular processes.
 CO2: Differentiate the various cell signaling pathways.
 CO3: Illustrate regulation of gene expression in eukaryotes.
 CO4: Take up research in the field of cell and molecular biology.

Subject and code: Molecular Biology, Bioinstrumentation and Techniques in Biology Lab - G508DC2.3P

Course Outcomes:

CO1: Describe the organization of macromolecules on membranes and cellular processes.
 CO2: Differentiate the various cell signaling pathways.
 CO3: Illustrate regulation of gene expression in eukaryotes.
 CO4: Take up research in the field of cell and molecular biology.

Subject and code: Endocrinology - G 508 OE 2.3E:

Course Outcomes:

CO1: To explain the roles of the endocrine system in maintaining homeostasis, integrating growth and development, responding to environmental insults and promoting successful reproduction.
 CO2 To discuss the definition of a hormone in terms of its general properties.

Semester- IV

Subject and code: Gene Technology , Immunology and Computational Biology - G508.DC2.4

Course Outcomes:

CO 1: Provide students with knowledge on how the immune system works during bacterial infection and viral infection
 CO2: Describe which cell types and organs present in the immune response.
 CO3: Apply basic techniques for identifying antigen-antibody interactions.
 CO4: Elucidate the reasons for immunization and aware of different vaccination

Subject and code: Gene Technology , Immunology and Computational Biology Lab - **G508.DC2.4P**

Course Outcomes:

CO 1: Provide students with knowledge on how the immune system works during bacterial infection and viral infection

CO2: Describe which cell types and organs present in the immune response.

CO3: Apply basic techniques for identifying antigen-antibody interactions.

CO4: Elucidate the reasons for immunization and aware of different vaccination

Subject and code: Animal Behavior - G 508 OE 1.4E:

Course Outcomes:

CO1: To understand what triggers behaviour and the importance of behaviour in an animal's chances of survival and reproductive success;

CO2: To gain a general knowledge of the development of the field of animal behaviour and how it is linked to related fields such as neurobiology and behavioural ecology.

Semester- V

Subject and code: NON-CHORDATES AND ECONOMIC ZOOLOGY - G 508 DC 1.5

Course Outcomes:

CO1: The identification and classification of Non-Chordates based on their general characters.

CO2: The diversity and evolutionary relationship among non-chordates.

CO3: The economic importance of Non-Chordates.

CO4: The entrepreneurship/ self-employment possibilities in various sectors of Zoology

Subject and code: NON-CHORDATES AND ECONOMIC ZOOLOGY Lab G 508 DC 2.5P

Course Outcomes:

CO1: The identification and classification of Non-Chordates based on their general characters.

CO2: The diversity and evolutionary relationship among non-chordates.

CO3: The economic importance of Non-Chordates.

CO4: The entrepreneurship/ self-employment possibilities in various sectors of Zoology

Subject and code: DIVERSITY OF CHORDATES AND COMPARITIVE ANATOMY- G 508 DC 3.5

Course Outcomes:

CO1: Learn the structural biology of Chordates through their adaptive features.

CO2: Study the functional biology of Chordates through their body organization and functions.

CO3: To explore and establish the correspondences between body parts of organisms from different species.

CO4: To understand the importance of anatomical structures to assess comparative study

from lower to higher vertebrates
Subject and code: DIVERSITY OF CHORDATES AND COMPARITIVE ANATOMY Lab - G 508 DC 4.5P
Course Outcomes:
CO1: Learn the structural biology of Chordates through their adaptive features. CO2: Study the functional biology of Chordates through their body organization and functions. CO3: To explore and establish the correspondences between body parts of organisms from different species. CO4: To understand the importance of anatomical structures to assess comparative study from lower to higher vertebrates
Subject and code: AQUATIC BIOLOGY - G 508 Voc 1.5
Course Outcomes:
CO1: The significance of aquatic ecosystems and its role. CO2: The diversity and adaptations of aquatic fauna in different aquatic biomes. CO3: The Physio-Chemical properties of aquatic habitats. CO4: The sources and effect of aquatic pollution and eco-restoration of aquatic systems.
Semester- VI
Subject and code: Evolutionary and Developmental Biology - G 508 DC 1.6
Course Outcomes:
CO1: To learn about the origin of life, organic evolution hypotheses, and evolution evidence. CO2: To highlight the importance of understanding evolution, speciation, and extinction. CO3: It emphasizes the oogenesis and gametogenesis processes and research on the early stages of fish, frogs, chickens, humans and also the focus is on birth abnormalities, the function of different stem cells in growth. CO4: Review of ageing and late developmental
Subject and code: : Evolutionary and Developmental Biology Lab – G 508 DC 2.6P
Course Outcomes:
CO1: To learn about the origin of life, organic evolution hypotheses, and evolution evidence. CO2: To highlight the importance of understanding evolution, speciation, and extinction. CO3: It emphasizes the oogenesis and gametogenesis processes and research on the early stages of fish, frogs, chickens, humans and also the focus is on birth abnormalities, the function of different stem cells in growth. CO4: Review of ageing and late developmental processes
Subject and code: ENVIRONMENTAL BIOLOGY, WILDLIFE MANAGEMENT AND CONSERVATION - G508DC 3.6
Course Outcomes:
CO1: Enhance understanding of students on the general principles of ecology as how it

related to terrestrial and aquatic plant and animal conservation and management.
 CO2: Impart field based training to students how it will be applicable to solve problems related to wildlife conservation and management.
 CO3: Enhance the ability of students to identify species, characteristics, habitat requirements and life cycles of birds, fish and mammalian wildlife species.
 CO4: Encourage the students to carry out the research works in frontier areas of Wildlife and Biodiversity Conservation.

Subject and code: ENVIRONMENTAL BIOLOGY, WILDLIFE MANAGEMENT AND CONSERVATION Lab- G508DC 4.6P

Course Outcomes:

CO1: Enhance understanding of students on the general principles of ecology as how it related to terrestrial and aquatic plant and animal conservation and management.
 CO2: Impart field based training to students how it will be applicable to solve problems related to wildlife conservation and management.
 CO3: Enhance the ability of students to identify species, characteristics, habitat requirements and life cycles of birds, fish and mammalian wildlife species.
 CO4: Encourage the students to carry out the research works in frontier areas of Wildlife and Biodiversity Conservation.

Subject and code: ENTOMOLOGY - G 508 Voc 1.6

Course Outcomes:

CO1: Students are trained in the basics of insect classifications and preservation of collected samples in the laboratory condition for future studies.
 CO2: The behaviour, insect physiology and biological applications of various insects are studied in detail.
 CO3: Plant-insect interactions are discussed to understand the biological significance of insects in controlling pests and pollination.
 CO4: Taxonomical training in identification and classification of insects helps students get job opportunities as entomologists or in related fields.

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:	G 500B B B.Sc. BOTONY
PROGRAMME OUTCOMES	

PO1. Get an opportunity in further studies, research and employment in various areas of life sciences

PO2. Enhance their knowledge in the field of life sciences and are able to handle laboratory equipments and experimentation for higher education leading to research

PO3. Enhance the scope of employability by obtaining all-round knowledge in the allied subjects along with Botany.

PO4. Develop an awareness towards the environment, biodiversity, conservation and their significance.

PO5. Equip themselves for competitive examinations

PO6. Inculcate an interest for nature and the need to preserve the nature by maintaining green house, herbal gardens in the campus and environs.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Able to get an opportunity in further studies, research and employment in various areas of plant sciences.

PSO2: To receive the updated subject matter, both theoretical as well as practical, such a way to foster their core competency, creative thinking and analytical learning .

PSO3: A botany graduate as envisioned in this framework would be sufficiently competent in the field to undertake further discipline-specific studies, as well as to begin domain-related employment.

PSO4: To enhance their knowledge in the field of life sciences and are able to handle laboratory equipments and experimentation for higher education leading to research

PSO5: To become a responsible citizen who is aware of the most basic domain-independent knowledge, including critical thinking and communication.

PSO6: enhance the scope of employability by obtaining all-round knowledge in the allied subjects along with Botany.

PSO7: To develop an awareness towards the environment, biodiversity, conservation and their significance.

PSO8: To promote and popularize the study of Botany for its importance and its social relevance

PSO9: To equip themselves for competitive examinations enabling the graduates to prepare for national as well as international competitive examinations, including UGC-CSIR NET and UPSC Civil Services Examination.

PSO10: To inculcate an interest for nature and the need to preserve the nature by maintaining greenhouse, herbal gardens in the campus and environs

Semester- I
Subject and code: MICROBIAL DIVERSITY AND TECHNOLOGY G 507 DC1.1
Course Outcomes:
CO1: understand the fascinating diversity, evolution, and significance of microorganisms. CO2: comprehend the systematic position, structure, physiology and life cycles of microbes and their impact on humans and environment. CO3: gain laboratory skills such as microscopy, microbial cultures, staining, identification and preservation of microbes. CO4: apply microbes in research and industry
Subject and code: MICROBIAL DIVERSITY AND TECHNOLOGY -PRACTICALS -G 507 DC 2.1P
Course Outcomes:
CO1: understand the fascinating diversity, evolution, and significance of microorganisms. CO2: comprehend the systematic position, structure, physiology and life cycles of microbes and their impact on humans and environment. CO3: gain laboratory skills such as microscopy, microbial cultures, staining, identification and preservation of microbes. CO4: apply microbes in research and industry
Subject and code: PLANTS FOR HUMAN WELFARE - G 507 OE 1.1
Course Outcomes:
CO1: gain knowledge on the economic importance of diverse plants that offer resources to human life. CO2: know about the plants used as food, medicinal value and also plant sources of different economic value . understand the importance of plants in today's life, conservation, ecosystem and sustainability.
Semester- II
Subject and code: DIVERSITY OF NON- FLOWERING PLANTS G507 DC1.2
Course Outcomes:
CO1. understand the diversity and affinities among Algae, Bryophytes, Pteridophytes and Gymnosperms. CO2: understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes, Pteridophytes and Gymnosperms. CO3: understand the ecological and evolutionary significance. CO4: obtain laboratory skills/explore non-flowering plants for their commercial

applications.

**Subject and code: DIVERSITY OF NON- FLOWERING PLANTS
- PRACTICALS - G507DC 2.2P**

Course Outcomes:

CO1. understand the diversity and affinities among Algae, Bryophytes, Pteridophytes and Gymnosperms.

CO2: understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes, Pteridophytes and Gymnosperms.

CO3: understand the ecological and evolutionary significance.

CO4: obtain laboratory skills/explore non-flowering plants for their commercial applications.

**Subject and code: PLANT PROPAGATION, NURSERY
MANAGEMENT AND GARDENING - G 507 OE 1.2**

Course Outcomes:

CO 1: gain knowledge of gardening, cultivation, multiplication, raising of seedlings of garden plants.

CO2: get knowledge of new and modern techniques of plant propagation.

CO3: develop interest in nature and plant life.

CO4: understand the application of this field in floriculture, agriculture and medicine

CO5: practice sustainable use of plant resources

Semester- III

**Subject and code: PLANT ANATOMY AND DEVELOPMENTAL
BIOLOGY - G507 DC1.3**

Course Outcomes:

CO 1 : Understand various levels of organization in a plant body with an outlook in the relationship between the structure and function through comparative studies.

CO2. Observe and classify the floral variations from the premises of college and house.

CO3. Understand the various reproductive methods sub-stages in the life cycle of plants

CO4. Observe and classify the embryological variations in angiosperms.

CO5. Understand evolution based on the variations in reproduction among plants.

**Subject and code: Molecular Biology, Bioinstrumentation and
Techniques in Biology - G507 DC2.3P**

Course Outcomes:

CO 1 : Understand various levels of organization in a plant body with an outlook in the relationship between the structure and function through comparative studies.

CO2. Observe and classify the floral variations from the premises of college and house.

CO3. Understand the various reproductive methods sub-stages in the life cycle of plants

CO4. Observe and classify the embryological variations in angiosperms. CO5. Understand evolution based on the variations in reproduction among plants.
Subject and code: : Medicinal and Aromatic plants - G 507 OE 1.3
Course Outcomes:
CO1: understand the concept of plant based medicine CO2: know the Medico-ethnobotanical sources CO3: identify medicinal and aromatic plants
Semester- IV
Subject and code: Ecology and Conservation Biology - G507 DC1.4
Course Outcomes:
CO 1 learn various types of ecosystems and its significance in biodiversity conservation CO2. understand ecological concepts like succession and plant adaptations,concept of sustainability CO3. learn the practical application of research methodologies in ecology with reference to community studies CO4. evaluate sustainable management related to local and global issues CO5. get knowledge on the recent issues associated with the environment
Subject and code: Ecology and Conservation Biology Lab G 507 DC 2.4 P
Course Outcomes:
CO 1 learn various types of ecosystems and its significance in biodiversity conservation CO2. understand ecological concepts like succession and plant adaptations,concept of sustainability CO3. learn the practical application of research methodologies in ecology with reference to community studies CO4. evaluate sustainable management related to local and global issues CO5. get knowledge on the recent issues associated with the environment
Subject and code: Plant Biodiversity and Conservation - G 507 OE 1.4
Course Outcomes:
CO1: Understand the concept of plant-based medicine CO2: Know the Medico-ethnobotanical sources CO3: Identify medicinal and aromatic plants
Semester- V
Subject and code: Plant Taxonomy & Resource Botany - G507 DC1.5
Course Outcomes:
CO1: Understand the concept of plant systematics and classification CO2: Describe the principles and rules involved in plant systematics and classification CO3: Identify the plants up to the level of a family CO4: Understand the application of this field in floriculture, agriculture and medicine CO5: Practice sustainable use of plant resources

Subject and code : Plant Taxonomy & Resource Botany Lab - G507 DC2.5P**Course Outcomes:**

CO1: Understand the concept of plant systematics and classification

CO2: Describe the principles and rules involved in plant systematics and classification

CO3: Identify the plants up to the level of a family

CO4: Understand the application of this field in floriculture, agriculture and medicine

CO5: Practice sustainable use of plant resources

Subject and code: Genetics and Plant Breeding - G507 DC3.5**Course Outcomes:**

CO1: Gain knowledge on principles of genetics, understand the natural genetic variation in plants and to know how diverse factors contribute to the expression of genotypic and phenotypic variation.

CO2: Understand the effect of different types of mutation on genotypic and phenotypic expression, understand the concept of plant sex determination and gene mutation

CO3: Understanding the basics of plant breeding, widen the knowledge on the role of polyploidy in plant breeding which could be employed in diverse fields of basic and applied research.

Subject and code: Genetics and Plant Breeding Lab - G507 DC 4.5P**Course Outcomes:**

CO1: Gain knowledge on principles of genetics, understand the natural genetic variation in plants and to know how diverse factors contribute to the expression of genotypic and phenotypic variation.

CO2: Understand the effect of different types of mutation on genotypic and phenotypic expression, understand the concept of plant sex determination and gene mutation

CO3: Understanding the basics of plant breeding, widen the knowledge on the role of polyploidy in plant breeding which could be employed in diverse fields of basic and applied research.

Subject and code: Algal & Fungal Biotechnology - G507 VOC5.5**Course Outcomes:**

CO1: Learn and understand the Biotechnological Applications of Algae and Fungi.

CO2: Understand the impact of Algae & Fungi in Industries.

CO3: To understand the methods for production of industrially important compounds from algal & fungal sources.

Semester- VI**Subject and code: Plant Physiology & Biochemistry - G507 DC1.6****Course Outcomes:**

CO1: Gain knowledge about underlying principles and mechanism involved in various physiological processes like Ascent of sap, transpiration, photosynthesis, translocation and respiration in plants

CO2: Know the various plant growth substances and their physiological effects

CO3: Understand the role of mineral nutrients in plants

CO4: Understand the concepts like vernalization and photoperiodism, and their practical applications in agriculture

CO5: Understand the structure & properties of Biochemical compounds

**Subject and code: Plant Physiology & Biochemistry Lab
G507 DC2.6P**

Course Outcomes:

CO1: Gain knowledge about underlying principles and mechanism involved in various physiological processes like Ascent of sap, transpiration, photosynthesis, translocation and respiration in plants

CO2: Know the various plant growth substances and their physiological effects

CO3: Understand the role of mineral nutrients in plants

CO4: Understand the concepts like vernalization and photoperiodism, and their practical applications in agriculture

CO5: Understand the structure & properties of Biochemical compounds

Subject and code: Plant Biotechnology - G507 DC3.6:

Course Outcomes:

CO1: Gain the knowledge of concepts and fundamental aspects pertaining to plant biotechnology,

CO2: Understand the principle involved in plant tissue culture and to realize the eco-friendly potential application of biotechnological processes

CO3: Comprehend the concept of genetically modified plants and their relevance to economy

CO4: Enhance their analytical skills in research and know the lab safety measures.

CO5: Acquire knowledge with regard to commercializing the primary and secondary metabolites as natural medicinal drugs.

Subject and code: Plant Biotechnology Lab - G507 DC4.6P

Course Outcomes:

CO1: Gain the knowledge of concepts and fundamental aspects pertaining to plant biotechnology,

CO2: Understand the principle involved in plant tissue culture and to realize the eco-friendly potential application of biotechnological processes

CO3: Comprehend the concept of genetically modified plants and their relevance to economy

CO4: Enhance their analytical skills in research and know the lab safety measures.

CO5: Acquire knowledge with regard to commercializing the primary and secondary metabolites as natural medicinal drugs.

Subject and code: Herbal Technology - G507 VOC5.6:

Course Outcomes:

CO1: Understand about the various technologies used in herbal preparations.

CO2: Learn the fundamentals of various systems of herbal medicines, screening and its standardization.

CO3: Understand raw material as source of herbal drugs from cultivation to herbal drug product

CO4: Know the WHO and ICH guidelines for evaluation of herbal drugs

CO5: Know the herbal cosmetics, natural sweeteners, nutraceuticals

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences

Department Name:	G 500B E B.Sc. BIOTECHNOLOGY
-------------------------	-------------------------------------

PROGRAMME OUTCOMES

PO 1. Understand concepts of Biotechnology and demonstrate interdisciplinary skills acquired in cell biology, genetics, biochemistry, microbiology, and molecular biology.

PO 2. Apply the knowledge and skills gained in the fields of plant biotechnology, animal biotechnology and microbial technology in pharma, food, agriculture, beverages, herbal and nutraceutical industries.

PO 3. Critically analyze environmental issues and apply the biotechnology knowledge gained for conserving the environment and resolving environmental problems.

PO 4. Demonstrate comprehensive innovations and skills in the fields of biomolecules, molecular biology, enzyme technology, bioprocess engineering and genetic engineering of plants, microbes, and animals with respect to applications for human welfare.

PO 5. Apply the knowledge and skills of immunology, bioinformatics, computational modelling of proteins, drug design and simulations to test models and aid in drug discovery.

PO 6. Critically analyze, interpret data, and apply tools of bioinformatics and multi-omics in various sectors of biotechnology including health and food.

PO 7. Demonstrate communication skills, scientific writing, data collection and interpretation abilities in all the fields of biotechnology.

PO 8. Learn and practice professional skills in handling microbes, animals and plants and demonstrate the ability to identify ethical issues related to recombinant DNA technology, genetic engineering, animals handling, intellectual property rights, biosafety, and biohazards.

- PO 9. Explore the biotechnological practices and demonstrate innovative thinking in addressing the current day and future challenges with respect to food, health, and environment.
- PO 10. Demonstrate thorough knowledge and application of good laboratory and good manufacturing practices in biotech industries.
- PO 11. Apply the molecular biology principles and techniques in forensic and clinical biotechnology.
- PO 12. Demonstrate entrepreneurship abilities, innovative thinking, planning, and setting up of small-scale enterprises or CROs.

PROGRAMME SPECIFIC OUTCOMES

- PSO.1 Graduates in biotechnology will be eligible for pursuing higher education, M.Sc. programmes in the different field of life science.
- PSO.2 Graduates will exhibit contemporary knowledge in Biotechnology and students will be eligible for doing jobs in pharmaceutical and biotechnological Industry.
- PSO.3 Graduates will be able to understand the potentials, and impact of biotechnological innovations on environment and their implementation for finding sustainable solution to issues pertaining to environment, health sector, agriculture, etc.
- PSO.4 Graduates will be able to design, conduct experiments, analyze and interpret data for investigating problems in Biotechnology and allied fields.
- PSO.5 Graduates will be able to work individually as well as in team to survive in multidisciplinary environment.
- PSO.6 Students are able to learn the modern molecular biological techniques viz, chromatography, SDS-PAGE, Agarose Gel Electrophoresis, fermentation, downstream processing and PCR which are very much required for the large-scale production of biotechnology derived products.

Semester- I

Subject and code: CELL BIOLOGY AND GENETICS - G 511 DC1.1

Course Outcomes:

- CO 1. Acquire a deep insight on the concepts of cell biology and describe the ultrastructure of cells, structure and function of organelles, cytosol and cytoskeleton.
- CO 2. Illustrate the phases of cell cycle, cell division, reductional division in gametes, molecular mechanisms that regulate life and death of a cell including programmed cell death or apoptosis and differentiation in plants.
- CO 3. Comprehend the organization and structure of chromosomes, banding patterns, karyotyping to detect genetic disorders and laws of inheritance, and gene interaction.
- CO 4. Describe mutations and its types, genetic or hereditary disorders and prenatal screening of genetic disorders

**Subject and code: CELL BIOLOGY AND GENETICS PRACTICAL
G 511 DC2.1P**

Course Outcomes:

CO1: Interpret the different stages of cell division and to calculate the mitotic index.
CO2: Measure the size of cells, count the number of cells using haemocytometer and perform the karyotyping analysis and solve various genetics problems.
CO3: Demonstrate the handling of *Drosophila melanogaster*, the model organism for genetic studies.
CO4: Describe the principles and procedures of genetic techniques in biological experiments

**Subject and code: BIOTECHNOLOGY FOR HUMAN WELFARE
G 511 OE 1.1**

Course Outcomes:

CO 1. Apply the biotechnological concepts in the industry
CO 2. Implement the biotechnological techniques in environmental management
CO 3. Describe application of biotechnology to forensic science
CO 4. Comprehend contributions of biotechnology to biomedical fields, such as diagnostics, genomics and therapeutics

Semester- II

**Subject and code: MICROBIOLOGICAL METHODS AND TECHNIQUES
G 511DC1.2**

Course Outcomes:

CO 1. Comprehend the importance and methods of sterilization in microbiological work
CO 2. Delineate the formulation of media, culture methods and staining techniques for isolation, characterization of microbes
CO 3. Apply the knowledge of antimicrobial agents in anti- microbial assays.

**Subject and code: Microbiological methods and techniques Practical
G 511 DC 2.2P**

Course Outcomes:

CO 1. Handle and use instruments used in Microbiology and Biotechnology laboratories
CO 2. Use analytical techniques for work using microorganisms
CO 3. Experiment with various methods of sterilization in microbiological work
CO 4. Prepare different types of media, perform culture methods and staining techniques for isolation, characterization of microbes
CO 5. Handle and use antimicrobial agents and perform anti-microbial assays

Subject and code: APPLICATIONS OF BIOTECHNOLOGY IN

AGRICULTURE - G 511 OE1.2
Course Outcomes:
CO 1. Employ the biotechnological approaches in agriculture
CO 2. Apply biotechnological methods in plant tissue culture
CO 3. Comprehend the pros and cons of GM crops and their plant products
Semester- III
Subject and code: Biomolecules - G511 DC1.3
Course Outcomes:
CO 1. Cognise the properties of carbohydrates, proteins, lipids, cholesterol, DNA, RNA, glycoproteins and glycolipids and their importance in biological systems.
CO 2. Apprehend the importance of high energy compounds, electron transport chain, synthesis of ATP under aerobic and anaerobic conditions.
CO 3. Interpret the metabolic pathways such as Glycolysis, Kreb's Cycle, ETC, pentose phosphate pathway, etc. occurring inside living cells.
CO 4. Apply comprehensive innovations and skills of biomolecules to biotechnology field
Subject and code : Biomolecules Practical - G511 DC 2.3P
Course Outcomes:
CO 1. Determine presence of biomolecules like carbohydrates, proteins, lipids, etc. in known and unknown samples.
CO 2. Determine the extent of adulteration in samples containing biomolecules.
CO 3. Construct the standard curve, analyze the data and interpret the results.
CO 4. Apply knowledge of biochemistry and metabolism in various cellular functions, and the application of research involved in various biochemical processes.
Subject and code: : NUTRITION AND HEALTH - G511 OE1.3
Course Outcomes:
CO 1. Apply the concepts of food, nutrition, and diet in life and design a balanced diet.
CO 2. Apply the best practices of food intake and dietary requirements.
CO 3. Acquire knowledge about various sources of nutrients and good cooking practices
Semester- IV
Subject and code: Molecular Biology - G 511 DC1.4
Course Outcomes:
CO 1. Acquire a deep insight on the concepts of central dogma in Molecular biology.
CO 2. Describe the fine structure of DNA and the mechanism of replication in prokaryotes and eukaryotes.
CO 3. Comprehend the causes of DNA damage and various mechanism of DNA repair.
CO 4. Illustrate the fundamental principles of gene expression and regulation in cells
Subject and code: Molecular Biology Practical - G 511 DC 2.4 P
Course Outcomes:

CO 1. Independently execute laboratory experiments using the standard methods and techniques in molecular biology, with the appropriate analysis and interpretation of results obtained.

CO 2. Independently use various instruments such as centrifuges, colorimeters, UV-transilluminator, Gel Doc, UV- Vis spectrophotometer in laboratory work.

Subject and code: INTELLECTUAL PROPERTY RIGHTS - G 511 OE 1.4

Course Outcomes:

CO 1. Elucidate different types of intellectual property rights in general and protection of products derived from biotechnology research.

CO 2. Acquire knowledge about filing patents, process, and infringement.

CO 3. Evaluate multiple perspectives about trademarks, industrial designs, and copyright.

Semester- V

Subject and code: GENETIC ENGINEERING - G511 DC1.5

Course Outcomes:

CO 1. Describe the principles, role of various DNA modifying enzymes used in genetic engineering.

CO 2. Implement a range of methodologies for genetic manipulation, encompassing diverse practices and genome editing techniques.

CO 3. Utilise various genetic engineering practices such as PCR, Hybridisation methods for diagnosis and various advanced development.

CO 4. Explore the multifaceted applications of genetic engineering in the biotechnology industry, employ computational tools in genetic manipulation, and critically examine the ethical implications associated with the manipulation of genetic material and its societal impact

Subject and code: GENETIC ENGINEERING PRACTICAL - G 511DC2.5 P

Course Outcomes:

CO 1. Utilize essential genetic engineering tools and techniques effectively for conducting practical experiments.

CO.2 Design experiments for isolation, purification and amplification of DNA for genetic engineering work.

CO 3. Analyse and interpret genetic data using bioinformatics tools for understanding of gene function and evolutionary relationships.

Subject and code: PLANT AND ANIMAL BIOTECHNOLOGY - G 511 DC3.5

Course Outcomes:

CO1. Analyze the fundamental concept of cellular totipotency and adeptly apply this understanding to proficiently execute micropropagation techniques, including bud culture, meristem culture, and organogenesis.

CO2. Evaluate the applications of transgenic plants and analyze their safety and ethical concerns.

CO3. Apply the basic techniques of mammalian cell culture, including parameters for measuring cell growth, viability, and cytotoxicity.

CO4. Analyze the concepts of gene therapy and cloning, evaluate applications of

transgenic animals, and consider their ethical implications.

Subject and code: PLANT AND ANIMAL BIOTECHNOLOGY PRACTICAL - G 511 DC4.5P

Course Outcomes:

- CO 1. Demonstrate skills in plant and animal tissue culture techniques.
- CO 2. Apply knowledge of cell and tissue culture techniques and PCR for both research and commercial purposes.
- CO 3. Plan and conduct experiments with the use of specific methods applied to *in vitro* culture of animal cell .

Semester- VI

Subject and code: IMMUNOLOGY - G 511 DC1.6

Course Outcomes:

- CO 1. Explain the distinction between innate and acquired immunity and recognize the roles of B and T-lymphocytes in both humoral and cell-mediated immune responses.
- CO 2. Understand major histocompatibility complexes, antigen processing pathways, complement pathways, cytokines, and types of hypersensitivity reactions.
- CO 3. Apply knowledge of immunodiffusion reactions, agglutination reactions, ELISA, RIA, immunocytochemistry, and fluorescent techniques in diagnosis.
- CO 4. Apply the domain-specific knowledge and skills acquired in immunology for innovative therapies and Immuno-technologies.

Subject and code: Immunology Practical - G 511 DC2.6P

Course Outcomes:

- CO 1. Execute immune cell differential counting and whole count of white blood cells accurately.
- CO 2. Successfully perform immunoassay techniques such as radial immunodiffusion and Ouchterlony double diffusion, dot ELISA, serum immune-electrophoresis, and Western blotting.
- CO3. Demonstrate proficiency in analyzing and interpreting experimental results.

Subject and code: Bioprocess and Environmental Biotechnology - G 511 DC3.6

Course Outcomes:

- CO 1. Describe the principles of upstream processing and calculate growth rates and biomass yields within diverse culture modes.
- CO 2. Compare and contrast various bioreactor designs and describe the principles and applications of various downstream processing techniques.
- CO 3. Propose biotechnological solutions to address specific environmental pollution challenges.
- CO 4. Design a bioremediation strategy for a specific contaminant and propose methods for effective wastewater treatment and solid waste management

Subject and code: Bioprocess and Environmental Biotechnology Practical -

G 511 DC4.6P**Course Outcomes:**

CO 1. Utilize crowding plate method to isolate industrially important microorganisms from natural resources.

CO 2 Apply various techniques to estimate key water quality parameters including sulphates, phosphates, chlorides, biological oxygen demand and microbial analysis of water.

CO 3. Produce amylase, ethanol, lactic acid, and wine through fermentation processes.

CO 4. Gain hands-on experience in essential techniques such as ammonium sulphate precipitation, dialysis, and total solids (TS) determination.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department**G 500B I B.Sc.****Name:****MICROBIOLOGY****PROGRAMME OUTCOMES**

PO 1. Disciplinary Knowledge: Bachelor degree in Food Technology helps to apply the knowledge of science, engineering fundamentals, and mathematical concepts to the solution in the field of food technology, science and other allied subjects

PO 2. Communication Skills: Communicate effectively and write effective reports and design documentation, make effective presentations through seminars, project dissertations

PO 3. Critical thinking and analytical reasoning: Recognize the need for, and have the preparation and ability to engage in independent/as an entrepreneur and life-long learning in the broadest context of technological change logical reasoning and capability of recognizing and distinguishing the various aspects of real-life problems.

PO 4. Problem Solving: Identify, formulate, review research literature, and analyze complex Food Technology/applications problems and Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the food sustainability

PO 5. Research related skills: Acquire the practical knowledge and demonstrate the ability to design, conduct/trouble shoot experiments and analyze data in the field of food technology

PO 6. Information/digital Literacy: The completion of this programme will enable the learner to use appropriate software's to apply for bulk scale/industrial production of technology-based food products

PO 7. Self-directed learning: The student completing this program will develop an ability of working independently and to make an in-depth study of various disciplines of food technology.

PO 8. Moral and ethical awareness/reasoning: Understand the impact of professional food technology solutions in societal and environmental contexts, and apply ethical principles and commit to professional ethics and responsibilities

PO 9. Lifelong learning: This programme provides self-directed learning and lifelong learning skills to think independently and develop problem-solving skills with respect to food industry

PO 10. Ability to peruse advanced studies and research in Allied fields of Food science.

PROGRAMME SPECIFIC OUTCOMES

PSO.1. Know the chemistry underlying the properties and reactions of various food components, have sufficient knowledge of food chemistry to control reactions in foods, know the major chemical reactions that limit shelf life of foods, use the laboratory techniques common to basic and applied food chemistry and know the principles behind analytical techniques associated with food.

PSO.2. Identify the important pathogens and spoilage microorganisms in foods and the conditions under which they will grow, inactivated, killed or made harmless in foods and know the principles involving food preservation via fermentation processes.

PSO.3. Incorporate the principles of food science and nutrition in practical, real- world situations and problems.

PSO.4. Apply the principles of food science to control and assure the quality of food products and also identify government regulations required for the manufacture and sale of food products.

PSO.5. List major properties, functions, and important food sources of the nutrients, describe human nutrient and energy needs throughout the life span and in physical training and translate human nutrient and energy needs into daily food selection utilizing appropriate standards and guidelines.

PSO.6. Explain the significance of food practices to nutrition and disease prevention and effectively evaluate meal plans for nutritional adequacy, nutrient density, balance, variety, and calorie control.

Semester- I

Subject and code: General Microbiology - G 509 DC1.1

Course Outcomes:

CO 1. Have developed a good knowledge of the development of the discipline of Microbiology and the contributions made by prominent scientists in this field.

CO2. Have developed a very good understanding of the characteristics of Different types of microorganisms, methods to organize/classify these into and basic tools to study these in the laboratory.

CO3. Describe the nutritional requirements of bacteria for growth; developed knowledge and understanding that besides common bacteria there are several other microbes which grow under extreme environments.

CO4. Perform basic laboratory experiments to study microorganisms; methods to preserve bacteria in the laboratory; calculate generation time of growing bacteria.
CO5. Are able to perform basic experiments to grow and study microorganisms in the laboratory.

Subject and code: Practical: : .General Microbiology - G 509 DC1.1P

Course Outcomes:

CO 1. Have developed a good knowledge of the development of the discipline of Microbiology and the contributions made by prominent scientists in this field.
CO2. Have developed a very good understanding of the characteristics of Different types of microorganisms, methods to organize/classify these into and basic tools to study these in the laboratory.
CO3. Describe the nutritional requirements of bacteria for growth; developed knowledge and understanding that besides common bacteria there are several other microbes which grow under extreme environments.
CO4. Perform basic laboratory experiments to study microorganisms; methods to preserve bacteria in the laboratory; calculate generation time of growing bacteria.
CO5. Are able to perform basic experiments to grow and study microorganisms in the laboratory.

Subject and code : Microorganisms for Human Welfare - G 509 OE1.1

Course Outcomes:

CO1: Acquire the knowledge of importance of microbes in human welfare.
CO2: Acquire the knowledge of importance of microbes in agriculture.
CO3: Acquire the knowledge of importance of microbes in pharmacy.

Semester- II

Subject and code: Microbial Biochemistry and Physiology - G 509 DC1.2

Course Outcomes:

CO1. Have developed a good knowledge of biochemical concepts with regard to the chemical bonds in biological compounds.
CO2. Have developed a very good understanding of the characteristics of Structure and properties of Water as an universal solvent, polarity, hydrophilic and hydrophobic interactions, properties of water, Acids, bases, electrolytes, hydrogen ion concentration, pH, buffers.
CO3. Describe the definition, classification, structure and properties of carbohydrates and amino acids and proteins, lipids; fatty acids: types and classification, Vitamins
CO4. Have an understanding the principles of bioenergetics and role of respiration in synthesis of energy molecules.
CO5. Perform biochemical tests with application of biochemical principles..

Subject and code : Practicals: Microbial Biochemistry and Physiology G 509 DC2.2 P

Course Outcomes:
CO1. Have developed a good knowledge of biochemical concepts with regard to the chemical bonds in biological compounds.
CO2. Have developed a very good understanding of the characteristics of Structure and properties of Water as an universal solvent, polarity, hydrophilic and hydrophobic interactions, properties of water, Acids, bases, electrolytes, hydrogen ion concentration, pH, buffers.
CO3. Describe the definition, classification, structure and properties of carbohydrates and amino acids and proteins, lipids; fatty acids: types and classification, Vitamins
CO4. Have an understanding the principles of bioenergetics and role of respiration in synthesis of energy molecules.
CO5. Perform biochemical tests with application of biochemical principles..
Subject and code: BACTERIOLOGY- G 509 OE1.2
Course Outcomes:
CO1: Acquire the knowledge of bacteria.
CO2: Acquire the knowledge of control of microorganisms.
CO3: Acquire the knowledge of nutrition of microbes.
Semester- III
Subject and code: Microbial Diversity--G509 DC3.1
Course Outcomes:
CO1: Knowledge about microbes and their diversity
CO2. Study, characters, classification and economic importance of Pro-eukaryotic and Eukaryotic microbes.
CO3. Knowledge about viruses and their diversity
Subject and code: Microbial Diversity Practical –G509.3DC3.1P
Course Outcomes:
CO 1. Knowledge about microbes and their diversity
CO2. Study, characters, classification and economic importance of Pro-eukaryotic and Eukaryotic microbes.
CO3. Knowledge about viruses and their diversity
Subject and code: Virology - G509.3OE
Course Outcomes:
CO1: Understand the concepts of viruses.
CO2: Acquire the knowledge of virus replication.
CO3: Understand the mode of infections by viruses
Semester- IV
Subject and code: Microbial Enzymology and Metabolism-

G509.4DC1.1
Course Outcomes:
<p>CO1: Understand the enzymes and their role in metabolism.</p> <p>CO2. Understand the fermentation pathways and their importance.</p> <p>CO3. Describing the growth characteristics of the microorganisms which require different nutrient for growth and the associated mechanisms of energy generation for their survival like autotrophs, heterotrophs, chemolithotrophs.</p> <p>CO4. Describe the metabolic pathway of photosynthesis as an energy yielding metabolic pathway in bacteria.</p> <p>CO5. Describe the biogeochemical cycles and mineral transformation by microbes.</p>
Subject and code : Microbial Enzymology and Metabolism – G509. 4DC4.1P
Course Outcomes:
<p>CO1: Understand the enzymes and their role in metabolism.</p> <p>CO2. Understand the fermentation pathways and their importance.</p> <p>CO3. Describing the growth characteristics of the microorganisms which require different nutrient for growth and the associated mechanisms of energy generation for their survival like autotrophs, heterotrophs, chemolithotrophs.</p> <p>CO4. Describe the metabolic pathway of photosynthesis as an energy yielding metabolic pathway in bacteria.</p> <p>CO5. Describe the biogeochemical cycles and mineral transformation by microbes.</p>
Subject and code : Environmental and Sanitary Microbiology Course 2 : G509.4OE
Course Outcomes:
<p>CO 1. Acquire the knowledge of microbes in environment.</p> <p>CO2: Acquire the knowledge of water borne infections.</p> <p>CO3: Understand the importance of the role of microbes in public health.</p>
Semester- V
Subject and code : MOLECULAR BIOLOGY - G509 DC 1.5
Course Outcomes:
<p>CO1. Understand concepts involved in replication, transcription, translation, and regulation of gene expression in bacteria and Eukaryotes.</p> <p>CO2. Differentiate the process of replication, transcription, translation, and regulation of gene expression in bacteria and Eukaryotes.</p> <p>CO3. Understand the genetic switch in bacteriophages.</p> <p>CO4. Compare and contrast housekeeping, constitutive, inducible, and repressible genes</p> <p>CO5. Outline regulatory mechanisms in bacteria to control cellular processes</p>
Subject and code : MOLECULAR BIOLOGY (Practical) – G509 DC2.5P
Course Outcomes:

CO1. Understand concepts involved in replication, transcription, translation, and regulation of gene expression in bacteria and Eukaryotes.
CO2. Differentiate the process of replication, transcription, translation, and regulation of gene expression in bacteria and Eukaryotes.
CO3. Understand the genetic switch in bacteriophages.
CO4. Compare and contrast housekeeping, constitutive, inducible, and repressible genes
CO5. Outline regulatory mechanisms in bacteria to control cellular processes

Subject and code : FOOD MICROBIOLOGY - G509 DC 3.5

Course Outcomes:

CO1. To understand the association of microbes in food and the quality testing of food
CO2. To understand the preservation and food safety protocols
CO3. To understand the methods of spoilage of food and the diseases associated with it
CO4. To learn the properties of milk and the types of preservation of milk.
CO5. To learn the types of fermented food and dairy products and their significance

Subject and code : FOOD MICROBIOLOGY Practical - G509 DC 4.5P

Course Outcomes:

CO1. To understand the association of microbes in food and the quality testing of food
CO2. To understand the preservation and food safety protocols
CO3. To understand the methods of spoilage of food and the diseases associated with it
CO4. To learn the properties of milk and the types of preservation of milk.
CO5. To learn the types of fermented food and dairy products and their significance

Semester- VI

Subject and code : IMMUNOLOGY AND MEDICAL MICROBIOLOGY - G 509 DC 1.6

Course Outcomes:

CO1: To gain a preliminary understanding of various immune mechanisms.
CO2: To familiarize with Immunological techniques and serodiagnosis of infectious diseases
CO3: To understand pathogenic bacterial infections, symptoms, diagnosis, and treatment process.
CO4: To understand pathogenic bacterial infections, symptoms, diagnosis and to understand pathogenic bacterial infections, symptoms, diagnosis, and treatment process.

Subject and code: IMMUNOLOGY AND MEDICAL MICROBIOLOGY Practical – G 5092.6P

Course Outcomes:

CO1: To gain a preliminary understanding of various immune mechanisms.
CO2: To familiarize with Immunological techniques and serodiagnosis of infectious diseases
CO3: To understand pathogenic bacterial infections, symptoms, diagnosis, and treatment process.
CO4: To understand pathogenic bacterial infections, symptoms, diagnosis and to understand pathogenic bacterial infections, symptoms, diagnosis, and treatment process.

Subject and code: INDUSTRIAL MICROBIOLOGY - G509 DC 3.6

Course Outcomes:

CO1. Learn the overview of the scope and importance of industrially important microbes
 CO2. Acquaint with different types of fermentation processes and equipment
 CO3. Evaluate the factors influencing the enhancement of cell and product formation during fermentation
 CO4. Acquire knowledge of the production of value-added products
 CO5. Acquire the knowledge of purification of value-added products

Subject and code: INDUSTRIAL MICROBIOLOGY Practical - G509 DC 0034.6P

Course Outcomes:

CO1. Learn the overview of the scope and importance of industrially important microbes
 CO2. Acquaint with different types of fermentation processes and equipment
 CO3. Evaluate the factors influencing the enhancement of cell and product formation during fermentation
 CO4. Acquire knowledge of the production of value-added products
 CO5. Acquire the knowledge of purification of value-added products

INTERNSHIP:

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improvise the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences

Department Name:	G 500B L B.Sc. FOOD SCIENCE
PROGRAMME OUTCOMES	
<p>PO 1. Disciplinary Knowledge: Bachelor degree in Food Technology helps to apply the knowledge of science, engineering fundamentals, and mathematical concepts to the solution in the field of food technology, science and other allied subjects</p> <p>PO 2. Communication Skills: Communicate effectively and write effective reports and design documentation, make effective presentations through seminars, project dissertations</p> <p>PO 3. Critical thinking and analytical reasoning: Recognize the need for, and have the preparation and ability to engage in independent/as an entrepreneur and life-long learning in the broadest context of technological change logical reasoning and capability of recognizing and distinguishing the various aspects of real-life problems.</p> <p>PO 4. Problem Solving: Identify, formulate, review research literature, and analyze complex Food Technology/applications problems and Design solutions for complex problems and design system components or processes that meet the specified needs with</p>	

appropriate consideration for the food sustainability

PO 5. Research related skills: Acquire the practical knowledge and demonstrate the ability to design, conduct/trouble shoot experiments and analyze data in the field of food technology

PO 6. Information/digital Literacy: The completion of this programme will enable the learner to use appropriate software's to apply for bulk scale/industrial production of technology-based food products

PO 7. Self-directed learning: The student completing this program will develop an ability of working independently and to make an in-depth study of various disciplines of food technology.

PO 8. Moral and ethical awareness/reasoning: Understand the impact of the professional food technology solutions in societal and environmental contexts, and apply ethical principles and commit to professional ethics and responsibilities

PO 9. Lifelong learning: This programme provides self-directed learning and lifelong learning skills to think independently and develop problem solving skills with respect to food industry

PO 10. Ability to peruse advanced studies and research in Allied fields of Food science.

PROGRAMME SPECIFIC OUTCOMES

PSO.1. Know the chemistry underlying the properties and reactions of various food components, have sufficient knowledge of food chemistry to control reactions in foods, know the major chemical reactions that limit shelf life of foods, use the laboratory techniques common to basic and applied food chemistry and know the principles behind analytical techniques associated with food.

PSO.2. Identify the important pathogens and spoilage microorganisms in foods and the conditions under which they will grow, inactivated, killed or made harmless in foods and know the principles involving food preservation via fermentation processes.

PSO.3. Incorporate the principles of food science and nutrition in practical, real- world situations and problems.

PSO.4. Apply the principles of food science to control and assure the quality of food products and also identify government regulations required for the manufacture and sale of food products.

PSO.5. List major properties, functions, and important food sources of the nutrients, describe human nutrient and energy needs throughout the life span and in physical training and translate human nutrient and energy needs into daily food selection utilizing appropriate standards and guidelines.

PSO.6. Explain the significance of food practices to nutrition and disease prevention and effectively evaluate meal plans for nutritional adequacy, nutrient density, balance, variety,

and calorie control..

Semester- I

**Subject and code: Fundamentals of Food Science & Nutrition
G 514 DC1.1**

Course Outcomes:

- CO 1. Obtain knowledge of different food groups, their composition and role in diet.
- CO 2. To gain knowledge of different plant and animal derived foods and their nutritive values and properties.
- CO 3. Different methods of processing and cooking.
- CO 4. Critically assess and analyze food science information available in the public domain in an innovative and ethical way.

**Subject and code : Fundamentals of Food Science & Nutrition
Practical– 1 G 514 DC2.1P**

Course Outcomes:

- CO 1. Obtain knowledge of different food groups, their composition and role in diet.
- CO 2. To gain knowledge of different plant and animal derived foods and their nutritive values and properties.
- CO 3. Different methods of processing and cooking.
- CO 4. Critically assess and analyze food science information available in the public domain in an innovative and ethical way.

Semester- II

**Subject and code: Food Processing And Preservation
G 514 DC1.2**

Course Outcomes:

- CO 1. Describes the principles of food preservation and suggest the application of the preservation process depending on the type of food.
- CO 2. Determines the thermal processing conditions (time / temperature) for each type of food and propose a device that matches a particular conservation process.
- CO 3. Chooses the appropriate application of certain conservation processes with regard to the preservation of quality and the satisfactory durability of food products.
- CO 4. Optimizes process parameters for selected conservation processes taking into account the physico-chemical properties of food products.

G 509 DC2.2 P

**Subject and code : Food Processing And Preservation Practical
G 514 DC1.2P**

Course Outcomes:

- CO 1. Describes the principles of food preservation and suggest the application of the preservation process depending on the type of food.

CO 2. Determines the thermal processing conditions (time / temperature) for each type of food and propose a device that matches a particular conservation process.
 CO 3. Chooses the appropriate application of certain conservation processes with regard to the preservation of quality and the satisfactory durability of food products.
 CO 4. Optimizes process parameters for selected conservation processes taking into account the physico-chemical properties of food products.

Semester- III

Subject and code: Basics of Food Safety and Quality Control
G514 DC1.3

Course Outcomes:

CO 1. Analyse and understand the export quality control procedures.CO 2.Provide frame work on the concepts of Quality Control Activities
 CO 3. Learn about the applications of safety management in food industry.
 CO 4. Define different food laws and regulations for quality management in food industry.CO 4. Detect the adulteration in food samples
 CO 5. Review of legislative approaches for the management of food safety

Subject and code: Basics of Food Safety and Quality Control
G509 DC2.3P

Course Outcomes:

CO 1. Analyse and understand the export quality control procedures.CO 2.Provide frame work on the concepts of Quality Control Activities
 CO 3. Learn about the applications of safety management in food industry.
 CO 4. Define different food laws and regulations for quality management in food industry.CO 4. Detect the adulteration in food samples
 CO 5. Review of legislative approaches for the management of food safety

Semester- IV

Subject and code: Fundamentals of food chemistry and microbiology
G 514 DC1.4

Course Outcomes:

CO 1. Students will have a thorough understanding of structure and classification various Components of food..
 CO 2. The students will know the process of complete digestion and assimilation of food Component.
 CO 3. Students will have a thorough understanding of various factors responsible for food Spoilage.
 CO 4. Define and have an overview on food chemistry including composition and the importance of water.

Subject and code : Fundamentals of food chemistry and microbiology

Practical G 514 DC2.4P**Course Outcomes:**

- CO 1. Students will have a thorough understanding of structure and classification various Components of food..
- CO 2. The students will know the process of complete digestion and assimilation of food Component.
- CO 3. Students will have a thorough understanding of various factors responsible for food Spoilage.
- CO 4. Define and have an overview on food chemistry including composition and the importance of water.

Semester- V**Subject and code : INTRODUCTIONS TO DAIRY & FERMENTATION TECHNOLOGY - G514DC 1.5****Course Outcomes:**

- CO1: After successful completion of this course students will be able to understand production of various dairy products.
Organization and operations involved in milk processing unit.
- CO2: To understand legislation for the quality control of milk and milk products.
- CO3: After successful completion of this course students will be able to understand screening process, fermenters, metabolites, production and purification of enzymes Plant cell culture process and production of fermented foods.

Subject and code : INTRODUCTIONS TO DAIRY & FERMENTATION TECHNOLOGY Practical - G514DC 2.5P**Course Outcomes:**

- CO1: After successful completion of this course students will be able to understand production of various dairy products.
Organization and operations involved in milk processing unit.
- CO2: To understand legislation for the quality control of milk and milk products.
- CO3: After successful completion of this course students will be able to understand screening process, fermenters, metabolites, production and purification of enzymes Plant cell culture process and production of fermented foods.

Subject and code : SPICES AND PLANTATION CROP TECHNOLOGY - G514DC 3.5**Course Outcomes:**

- CO1: Students will have a thorough understanding the unit operations followed for raw form to an edible form of Spices, Herbs, cereals and legumes.
- CO2: The students will know the importance of various methods to identify any disorder in fresh commodities.
- CO3: Students will have a thorough understanding on various methods of preparation of food packaging materials, their defects and standards.
- CO4: The students will know the importance of packaging in food preservation, shelf-life

determination and deterioration of nutritional components with the use of various types of packaging materials.

Subject and code : SPICES AND PLANTATION CROP TECHNOLOGY Practical - G514 DC 4.5P

Course Outcomes:

CO1: Students will have a thorough understanding the unit operations followed for raw form to an edible form of Spices, Herbs, cereals and legumes.

CO2: The students will know the importance of various methods to identify any disorder in fresh commodities.

CO3: Students will have a thorough understanding on various methods of preparation of food packaging materials, their defects and standards.

CO4: The students will know the importance of packaging in food preservation, shelf-life determination and deterioration of nutritional components with the use of various types of packaging materials.

Semester- VI

Subject and code : INTRODUCTION TO MEAT, FISH AND POULTRY PROCESSING - G514 DC 1.6

Course Outcomes:

CO1: Students will get knowledge about structure of meat, pre and post mortem examination of meat and poultry.

CO2: Students will acquaint with different techniques of meat and fish processing and preservation along with slaughter house by product utilization.

CO3: Slaughtering, post mortem physico-chemicals changes knowledge will also be gained by students.

Subject and code : INTRODUCTION TO MEAT, FISH AND POULTRY PROCESSING Practical- G514 DC 2.6P

Course Outcomes:

CO1: Students will get knowledge about structure of meat, pre and post mortem examination of meat and poultry.

CO2: Students will acquaint with different techniques of meat and fish processing and preservation along with slaughter house by product utilization.

CO3: Slaughtering, post mortem physico-chemicals changes knowledge will also be gained by students.

Subject and code : WASTE MANAGEMENT IN FOOD INDUSTRY - G514 DC 3.6

Course Outcomes:

CO1: Students will have a thorough understanding the biotechnological tools and techniques.

CO2: The students will know the importance of various fermentation methods to design various fermented foods and food products.

CO3: Students will have a thorough understanding on utilization of food wastes to produce value-added products or ingredients.

CO4: The students will know the importance of research on new product development and its scope.

Subject and code : WASTE MANAGEMENT IN FOOD INDUSTRY – G514 DC 4.6P

Course Outcomes:

CO1: Students will have a thorough understanding the biotechnological tools and techniques.

CO2: The students will know the importance of various fermentation methods to design various fermented foods and food products.

CO3: Students will have a thorough understanding on utilization of food wastes to produce value-added products or ingredients.

CO4: The students will know the importance of research on new product development and its scope.

INTERNSHIP

- ✓ To pursue internship in a company or an institution which gives opportunity to explore and nurture our skills.
- ✓ To undertake experiential learning to improve the technical and social skills.
- ✓ To build curriculum vitae and strengthen the work experiences.

Department Name:

**G 600
B C A**

PROGRAMME OUTCOMES

PO1: Understand, Analyze and Develop computer programs in the areas related to Object-oriented concepts, Web designing and Algorithms.

PO2: Develops the necessary skills to make a career in the field of computers.

PO3: Inculcate various software development practices.

PO4: Develops the ability to select modern computing tools, skills and technique necessary for innovative software solutions.

PO5: Developing ability to identify, analyze the complex computing problem using fundamentals of computer science and application domain.

PO6: Building ability to work as a member or leader of a team in multidisciplinary environment.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Producing knowledgeable and skilled human resources to be employable in IT Industry.

PSO2: Exploring the skills of students to become entrepreneurs who can develop customized solutions for small and medium enterprises.

PSO3: Giving skills and information not only about computer and information technology but also about organization and management.

Semester- I
Subject and code : Fundamentals of Computers - G 601 DC 1.1
Course Outcomes:
CO1: Understand the fundamentals of computer system CO2: Identify different components within the computer system CO3: Understand different types of input and output devices CO4: Demonstrate the working concepts of different devices connected to computer CO5: Explain different generations of programming languages and their significance CO6: Understand the use of Word processing, Spreadsheet, Presentation and DBMS applications CO7: Understand Digital computer and digital systems functioning
Subject and code: Programming in C - G 601 DC 2.1
Course Outcomes:
CO1 Read, understand and trace the execution of programs written in C language CO2: Write the C code for a given problem CO3: Perform input and output operations using programs in C CO4: Write programs that perform operations on arrays
Subject and code: C Programming Lab - G 601 DC 2.1P
Course Outcomes:
CO1 Read, understand and trace the execution of programs written in C language CO2: Write the C code for a given problem CO3: Perform input and output operations using programs in C CO4: Write programs that perform operations on arrays
Subject and code: Mathematical Foundation - G 601 DC 3.1
Course Outcomes:
CO1: Study and solve problems related to connectives, predicates and quantifiers under different situations. CO2: Develop basic knowledge of matrices and to solve equations using Cramer's rule. CO3: Know the concept of Eigen values. CO4: To develop the knowledge about derivatives and know various applications of differentiation. CO5: Understand the basic concepts of Mathematical reasoning, set and functions
Subject and code: Business Statistics - G 601 OE 1.1
Course Outcomes:
CO1: Frame and formulate management decision problems. CO2: Understand the basic concepts underlying quantitative analysis. CO3: Use sound judgment in the applications of quantitative methods to management decisions.
Subject and code: Office Automation G 601 OE 2.1
Course Outcomes:
CO1: Compare and contrast various types of operating systems CO2: Explain the purpose of office automation

CO3: Describe how information is stored and retried in/from computer memory
CO4: Know about various types of office automation software and their applications
CO5: Create document using word processing software
CO6: Design presentation using presentation software
CO7: Create worksheets using spreadsheet software
CO8: Store and retrieve data in/from database management application

Semester- II

Subject and code: Data Structures using C - G 601 DC 1.2

Course Outcomes:

CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
CO2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs
CO3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
CO4: Demonstrate different methods for traversing trees
CO5: Compare alternative implementations of data structures with respect to performance
CO6: Describe the concept of recursion, give examples of its use
CO7: Discuss the computational efficiency of the principal algorithms for sorting and searching

Subject and code: Data Structures Lab - G 601 DC 1.2P

Course Outcomes:

CO1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
CO2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs
CO3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
CO4: Demonstrate different methods for traversing trees

Subject and code : Object Oriented Programming with JAVA- G 601 DC 2.2

Course Outcomes:

CO1: Understand the features of Java and the architecture of JVM
CO2: Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done
CO3: Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance
CO4: The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other

<p>Programming Language CO5: Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files</p>
<p>Subject and code : Object Oriented Programming with JAVA LAB – G 601 DC 2.2P</p>
<p>Course Outcomes:</p>
<p>CO1: Understand the features of Java and the architecture of JVM CO2: Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done CO3: Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance CO4: The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA’s Exceptional handling mechanism compared to other Programming Language CO5: Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files</p>
<p>Subject and code : Discrete Mathematical Structures - G 601 DC 3.2</p>
<p>Course Outcomes:</p>
<p>CO1: To understand the basic concepts of Mathematical reasoning, set and functions. CO2: To understand various counting techniques. CO3: Understand the concepts of various types of relations, partial ordering and equivalence relations. CO4: To understand the concept of probability and mathematical induction. CO5: Familiarize the fundamental concepts of graph theory and shortest path algorithm. CO6 : To understand the concept of binary tree representation.</p>
<p>Subject and code: Applied Statistics - G 601 OE 1.2</p>
<p>Course Outcomes:</p>
<p>CO1: Understand the Price and Quantity Index numbers and their different measures, understand the applicability of cost-of-living Index number. CO2: Know the components and Need for Time series, understand the different methods of studying trend and Seasonal Index. CO3: Study the concept of vital statistics, sources of data, different measures of Fertility and Mortality, Understand the Growth rates- GRR and NRR and their interpretations. CO4: Know the concept of Population, Sample, Sampling unit, sampling design, sampling frame, sampling scheme, need for sampling, apply the different sampling methods for designing and selecting a sample from a population, explain sampling and non-sampling errors. CO5: Describe the philosophy of statistical quality control tools as well as their usefulness in industry and hence develop quality control tools in a given situation. CO8: Store and retrieve data in/from database management application</p>
<p>Subject and code: Web Designing - G 601 OE 2.2</p>
<p>Course Outcomes:</p>
<p>CO1: Compare and contrast various types of operating systems CO2: Explain the purpose of office automation CO3: Describe how information is stored and retried in/from computer memory CO4: Know about various types of office automation software and their applications CO5: Create document using word processing software</p>

CO6: Design presentation using presentation software
CO7: Create worksheets using spreadsheet software
CO8: Store and retrieve data in/from database management application

Semester- III

Subject and code:: Data Base Management Systems - G 601 DC 1.3

Course Outcomes:

CO1: To describe data models and schemas in DBMS
CO2: To understand the features of database management systems and Relational database.
CO3: To Demonstrate an understanding of the relational data model and use SQL.
CO4: To understand the functional dependencies and use SQL solutions to a broad range of query and data update problems..

Subject and code:: Data Base Management Systems Lab - G 601 DC 1.3P

Course Outcomes:

CO1: To describe data models and schemas in DBMS
CO2: To understand the features of database management systems and Relational database.
CO3: To Demonstrate an understanding of the relational data model and use SQL.
CO4: To understand the functional dependencies and use SQL solutions to a broad range of query and data update problems..

Subject and code: C# and DOT NET Framework - G 601 DC 2.3

Course Outcomes:

CO1: Learn to design, develop and execute basic programs in C#.
CO2: Explore the basics of C# in more detail to create an application.
CO3: Gain mastery over object-oriented programming (OOP) to write cleaner, more modular, and more scalable code.

Subject and code: C# and DOT NET Framework Lab - G 601 DC 2.3P

Course Outcomes:

CO1: Learn to design, develop and execute basic programs in C#.
CO2: Explore the basics of C# in more detail to create an application.
CO3: Gain mastery over object-oriented programming (OOP) to write cleaner, more modular, and more scalable code.

Subject and code: Operating System Concepts - G 601 DC 3.3

Course Outcomes:

CO1: At the end of the course students will able to Analyze the structure of OS and basic architectural components involved in design
CO2: Analyze the various resource management techniques conceptualize the components involved in designing a contemporary OS.

CO3: Learn Windows Operating system basics

**Subject and code : COMPUTER ORIENTED NUMERICAL ANALYSIS
G 601 OE 1.3**

Course Outcomes:

CO1: At the end of the course students will be able to solve an algebraic or transcendental equation using an appropriate numerical method.

CO2: Solve a differential equation using an appropriate numerical method and Apply Numerical Concepts in Coding.

Semester- IV

Subject and code: Python Programming - G 601 DC1.4

Course Outcomes:

CO1: Be skilled at creating, debugging and testing a software application using the Python programming language.

Subject and code: Python Programming lab - G 601 DC 1.4P

Course Outcomes:

CO1 Be skilled at creating, debugging and testing a software application using the Python programming language.

Subject and code: Computer Multimedia and Animation - G 601 DC 2.4

Course Outcomes:

CO1: able to draw primitive graphical shapes and perform transformation techniques programmatically.

CO2: learn about various new technologies developed and their applications.

**Subject and code: Computer Multimedia and Animation Lab –
G 601 DC 2.4P**

Course Outcomes:

CO1: able to draw primitive graphical shapes and perform transformation techniques programmatically.

CO2: learn about various new technologies developed and their applications.

**Subject and code: Computer Communication and Networks
G 601 DC 3.4**

Course Outcomes:

CO1: able to draw primitive graphical shapes and perform transformation techniques programmatically.

CO2: learn about various new technologies developed and their applications.

Semester- V

Subject and code: Design And Analysis of Algorithms - G 601 DC 1.5

Course Outcomes:

CO1. Understand the fundamental concepts of algorithms and their complexity, including time and space complexity, worst-case and average-case analysis, and Big-O notation.

CO2. Design algorithms for solving various types of problems, such as Sorting, Searching, and Graph traversal, Decrease-and-Conquer, Divide-and-Conquer and Greedy Techniques.

CO3. Analyze and compare the time and space complexity of algorithms with other algorithmic techniques.

CO4. Evaluate the performance of Sorting, Searching, Graph traversal, Decrease-and-Conquer, Divide-and-Conquer and Greedy Techniques using empirical testing and benchmarking, and identify their limitations and potential improvements.

CO5. Apply various algorithm designs to real-world problems and evaluate their effectiveness and efficiency in solving them.

Subject and code: Design And Analysis of Algorithms Lab - G 601 DC 1.5P

Course Outcomes:

CO1. Understand the fundamental concepts of algorithms and their complexity, including time and space complexity, worst-case and average-case analysis, and Big-O notation.

CO2. Design algorithms for solving various types of problems, such as Sorting, Searching, and Graph traversal, Decrease-and-Conquer, Divide-and-Conquer and Greedy Techniques.

CO3. Analyze and compare the time and space complexity of algorithms with other algorithmic techniques.

CO4. Evaluate the performance of Sorting, Searching, Graph traversal, Decrease-and-Conquer, Divide-and-Conquer and Greedy Techniques using empirical testing and benchmarking, and identify their limitations and potential improvements.

CO5. Apply various algorithm designs to real-world problems and evaluate their effectiveness and efficiency in solving them.

Subject and code: Statistical Computing and R Programming - G 601 DC 2.5

Course Outcomes:

CO1. Explore fundamentals of statistical analysis in R environment.

CO2. Describe key terminologies, concepts and techniques employed in Statistical Analysis.

CO3. Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.

CO4. Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.

CO5. Understand, Analyze, and Interpret Correlation Probability and Regression to analyze the underlying relationships between different variables.

Subject and code: Statistical Computing and R Programming - G 601 DC 2.5P

Course Outcomes:

CO1. Explore fundamentals of statistical analysis in R environment.

CO2. Describe key terminologies, concepts and techniques employed in Statistical Analysis.

CO3. Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.

CO4. Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.

CO5. Understand, Analyze, and Interpret Correlation Probability and Regression to analyze the underlying relationships between different variables.

Subject and code: SOFTWARE ENGINEERING - G 601 DC 3.5

Course Outcomes:

CO1 How to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction, and deployment.

CO2 An ability to work in one or more significant application domains.

CO3 Work as an individual and as part of a multidisciplinary team to develop and deliver quality software.

CO4 Demonstrate an understanding of and apply current theories, models, and techniques that provide a basis for the software lifecycle.

CO5 Demonstrate an ability to use the techniques and tools necessary for engineering practice

Subject and code: Cloud Computing - G 601 DE 1.5

Course Outcomes:

CO1: Explain the core concepts of the cloud computing paradigm such as how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing.

CO2: Apply the fundamental concepts in data centers to understand the trade-offs in power, efficiency and cost.

CO3: Identify resource management fundamentals like resource abstraction, sharing and sandboxing and outline their role in managing infrastructure in cloud computing.

CO4: Analyze various cloud programming models and apply them to solve problems on the cloud.

Subject and code: Digital Marketing - G 601 VO 1.5

Course Outcomes:

CO1. Understand the fundamental concepts and principles of digital marketing.

CO2. Develop practical skills to implement various digital marketing strategies and techniques

Co3. Analyze and evaluate the effectiveness of digital marketing campaigns.

CO4. Apply critical thinking and problem-solving skills to real-world digital marketing scenarios.

CO5. Create comprehensive digital marketing plans and strategies

Subject and code: Cyber Security - G 601 SB 1.5

Course Outcomes:

CO1: Understand the concept of Cyber security and issues and challenges associated with it.

CO2: Understand the cybercrimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures.

CO3: Appreciate various privacy and security concerns on online Social media and understand the reporting procedure of inappropriate content, underlying legal aspects and best practices for the use of Social media platforms.

CO4: On completion of this course, students should be able to appreciate various privacy

and security concerns on online Social media and understand the reporting procedure of inappropriate content, underlying legal aspects and best practices for the use of Social media platforms.

Subject and code: Employability Skills - G 601 SB 1.5

Course Outcomes:

CO1: Develop systematic problem-solving abilities.

CO2: Enhance verbal and non-verbal reasoning skills.

CO3: Improve numerical and analytical abilities.

CO4: Enhance English language and communication skills.

Semester- VI

Subject and code : PHP & MySQL - G 601 DC 1.6

Course Outcomes:

CO1. Design dynamic and interactive web pages and websites.

CO2. Run PHP scripts on the server and retrieve results.

CO3. Handle databases like MySQL using PHP in websites

Subject and code: : PHP & MySQL LAB - G 601 DC 1.6P

Course Outcomes:

CO1. Design dynamic and interactive web pages and websites.

CO2. Run PHP scripts on the server and retrieve results.

CO3. Handle databases like MySQL using PHP in websites

Subject and code: Advanced JAVA and J2EE - G 601 DC 2.6

Course Outcomes:

CO1: At the end of the course students will be able to Design/Develop Program

CO2: Develop appropriate data model and database scheme

CO3: Create and test prototypes

Subject and code: Advanced JAVA and J2EE LAB - G 601 DC 2.6P

Course Outcomes:

CO1: At the end of the course students will be able to Design/Develop Program

CO2: Develop appropriate data model and database scheme

CO3: Create and test prototypes

Subject and code: Artificial Intelligence and Applications - G 601 DC 3.6

Course Outcomes:

CO1: Gain a historical perspective of AI and its foundations.

CO2: Become familiar with basic principles and strategies of AI towards problem solving

CO3: Understand and apply approaches of inference, perception, knowledge representation, and learning.

CO3: Understand the various applications of AI

Subject and code: Fundamentals of Data Science - G 601 DE 1.6

Course Outcomes:

CO1: Understand the concepts of data and pre-processing of data.

CO2: Know simple pattern recognition methods CO3: Understand the basic concepts of Clustering and Classification CO4: Know the recent trends in Data Science
Subject and code: Web Content Management System - G 601 VO 1.6
Course Outcomes: CO1: Understand content development basics; CO2: Gain Knowledge of tools for multimedia content development for audio/ video, graphics, animations, presentations, screen casting CO3: Host websites and develop content for social media platforms such as wiki and blog CO4 :Understand e-publications and virtual reality CO5: Use of e-learning platform Moodle and CMS applications Drupal and Joomla
Subject and code: Mini Project - G 601 SB 1.6
Course Outcomes: CO1: to give students exposure to Software development exercises. CO2: The primary emphasis of the project work is to understand and gain the knowledge of the principles of software engineering practices.

Department Name:	BV 110 B Voc (Retail Management)
PROGRAMME OUTCOMES	
<p>PO1: To make students capable of the applicable National Occupational Standards (NOS) in the Retail Management industry in the national and global context .</p> <p>PO2: Students will be able to apply techniques, frameworks and tools to arrive at informed decisions in profession and practice.</p> <p>PO3: Graduates will have a solid foundation to pursue professional careers and take up higher learning courses such as M. Voc., MBA, , M. Phil, Ph.D as well as research.</p> <p>PO4: Graduates with a flair of self-employment will be able to initiate and build upon entrepreneurial ventures or demonstrate entrepreneurship for their employer organizations.</p> <p>PO5: Graduate will recognize the need for adapting to change and have the aptitude and ability to engage in independent and life – long learning in the broadest context of socio-economic, technological and global change.</p> <p>PO6: To provide students with a comprehensive understanding of the theoretical and applied aspects of retail management.</p> <p>PO7: To inculcate all the desired skills to meet the needs of today’s customer by procuring the desired merchandise from the retail stores for their personal use.</p> <p>PO8: To equip students with skills required to bring the customers into the store and respond to their buying needs</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO1: Develop the knowledge, skill and attitude to creatively and systematically apply in the Retail Management field .</p> <p>PSO2: Develop fundamental in-depth knowledge and understanding of the techniques, principles, concepts, values, substantive rules and development of the core areas of Retail</p>	

Management.

PSO3: Exhibit self-confidence and awareness of general issues prevailing in the technological field and in the society and communicate effectively with the other departments, professional fraternity and with society at large through digital and non-digital mediums and using a variety of modes such as effective reports & documentation, effective presentations.

PSO4: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings by demonstrating life skills, coping skills and human values.

PSO5: Explain theoretical framework of Retail Management Demonstrate the job role of Sales Associate

Semester- I

Subject and code : Introduction to Retailing - BV113.1

Course Outcomes:

CO1: To provide in-depth understanding of all aspects of retail business.

CO2: To provide an understanding of retailing as an Economic and social process.

Subject and code: Elements of Salesmanship - BV 114.1

Course Outcomes:

CO1 : To impart conceptual knowledge of salesmanship and understanding consumer behavior.

CO2: To impart knowledge on sales techniques.

Subject and code: STORES LAYOUT AND DESIGN - BV 116.1P

Course Outcomes:

CO1 : To familiarize the learner with the various facets of retail store and its significance in a retail business.

CO2: To understand the practical implications of store layout, space management and store design.

Subject and code: RETAIL STORE OPERATION - 1BV 117.1P

Course Outcomes:

CO1: To familiarize with point of sale activities.

CO2: To develop customer handling skills.

Project/ Internship - BV118.1P

Semester- II

Subject and code: PRINCIPLES OF MANAGEMENT- BV 113.2

Course Outcomes:

CO1: To develop the skill of managing business.

CO2: To procure managerial skills and abilities.

Subject and code: FUNDAMENTALS OF CUSTOMER SERVICE BV 114.2

Course Outcomes:

CO1: To impart the skills required to interact and manage the customers.

CO2: To handle efficiently the customer grievances

Subject and code : VISUAL MERCHANDISING - BV 116.2P
Course Outcomes:
CO1: To equip the students with an overall understanding of significance of visual Merchandising. CO2: To equip in depth knowledge on planogram.
Subject and code : RETAIL STORE OPERATION- 2 - BV 117.2 P
Course Outcomes:
CO1: To familiarize with the organization aspects. CO2: To develop skills to manage customer related issues in Retail sector.
Project/ Internship - BV118.2P
Semester- III
Subject and code:: RETAIL MANAGEMENT - BV113.3
Course Outcomes:
CO1: Exploring growth opportunities in international retailing CO2: Understanding the Operational challenges faced in retailing
Subject and code:: MARKETING MANAGEMENT- BV114.3
Course Outcomes:
CO1: Learn the basic concepts of Marketing CO2: Learn the recent trends in marketing and develop marketing skills in retail sector
Subject and code BRAND MANAGEMENT- BV 116.3 P
Course Outcomes:
CO1: Overall knowledge about Branding CO2: Acquiring knowledge on various areas of branding
Subject and code: RETAIL STORE OPERATION-3 - BV 117.3P
Course Outcomes:
CO1: To familiarize with retail marketing strategies CO2: Hands on experience with store inventory management
Project/ Internship - BV118.3P
Semester- IV
Subject and code: ACCOUNTING FUNDAMENTALS - BV 113.4
Course Outcomes:
CO1: To develop acquaintance with basic techniques of accountancy. CO2: Providing comprehensive knowledge of maintenance of various books of accounts
Subject and code: ADVERTISING AND SALES PROMOTION BV114.4
Course Outcomes:
CO1 : Focus on basic concepts of advertising and sales promotion CO2: Knowledge on digital marketing advertising and sales promotion techniques
Subject and code: MALL MANAGEMENT - BV 116.4
Course Outcomes:
CO1: Exploring the various areas of Opportunities in mall management CO2: Skills to manage a mall effectively and efficiently

Subject and code: RETAIL STORE OPERATION-4 - BV 117.4 P
Course Outcomes:
CO1: able to draw primitive graphical shapes and perform transformation techniques programmatically.
CO2: learn about various new technologies developed and their applications.
Subject and code: Computer Communication and Networks G 601 DC 3.4
Course Outcomes:
CO1: To develop practical knowledge on advertisement of FMCG
CO2: To develop the ideas of various Advertising strategies in retail
Project/ Internship - BV118.4P
Semester- V
Subject and code: BUSINESS ORGANIZATION AND ENVIRONMENT - BV 111.5
Course Outcomes:
CO1: Understanding the minor and major factors affecting the business in various streams
CO2: To understand the various types of business opportunities
Subject and code : GENERAL ECONOMICS - BV 112.5
Course Outcomes:
CO1: To have a grasp of the elements of economics
CO2: To analyse the current economic condition
Subject and code: LOGISTICS MANAGEMENT - BV 113.5
Course Outcomes:
CO1: Skills the knowledge required to work in a logistics firm
CO2: The role and contribution of IT in logistics
Subject and code : CUSTOMER RELATIONSHIP MANAGEMENT - BV 114.5
Course Outcomes:
CO1: To understand the importance of customer relationship management in business
CO2: Focus on Emerging trends in CRM
Subject and code : MARKETING FOR SERVICES - BV 116.5P
Course Outcomes:
CO1: To understand the importance and role of services in the total marketing concept.
CO2: To have an understanding about the conceptual issues in service marketing.
Subject and code : RETAIL STORE OPERATION-5- BV117.5 P
Course Outcomes:
CO1: Understanding logistics interface
CO2; To familiarize with the strategies used in retail sector to in managing customers
Project/ Internship - BV118.5P
Semester- VI
Subject and code : HUMAN RESOURCE MANAGEMENT - BV 111.6
Course Outcomes:
CO1: Knowledge on industrial relations
CO2: Skills to manage the retail personnel
Subject and code : ELEMENTS OF BANKING - BV 112.6

Course Outcomes:
CO1: Summarize the relationship between Banker & customer and different types of functions of banker. CO2: Examine the different types of negotiable instrument & their relevance in the present context..
Subject and code : FRANCHISING MANAGEMENT - BV 113.6
Course Outcomes:
CO1: To create an in-depth understanding of Franchising CO2: Knowing the advantages and disadvantages of franchising
Subject and code : E-COMMERCE - BV 114.6
Course Outcomes:
CO1: Practical knowledge on Ecommerce application CO2: Global trends in Ecommerce
Subject and code : CONSUMER BEHAVIOUR BV - 116.6 P
Course Outcomes:
CO1: Compare and contrast the various types of consumer behaviour CO2: Consumer behaviour on various settings
Subject and code : RETAIL STORE OPERATION-6 - BV 117.6P
Course Outcomes:
CO1: To understand the Human resource aspects of any given organization CO2: To familiarize with the recent trends in E-Commerce
Project/ Internship - BV118.6P

Department Name:	BV 130 B Voc (Food Processing and Engineering)
PROGRAMME OUTCOMES	
PO1: Develop skill and expertise in post graduate scholars to work on projects for value addition of various food products PO2: Generate adequate trained man power to work in food processing industries. PO3: Develop cadre of scholars for achieving entrepreneurial skills and self-employment opportunities in food processing sector.	
PROGRAMME SPECIFIC OUTCOMES	
PSO1: To relate the chemical composition of foods to their functional properties. PSO2:To understand, plan, perform and analyse a range of chemical investigations with an emphasis on food analysis. PSO3:To give a molecular rationalization for the observed physical properties and reactivity of major food component.	
Semester- I	
Subject and code : Basics of food processing - BV 133.1	

Course Outcomes:
CO1: Outline the process of red and white meat slaughter, explain meat structure and inspect meat quality parameters. CO2: Demonstrate processing techniques used to produce a variety of Food Products. CO3: Work in teams to develop communication skills and company Good Manufacturing Practices
Subject and code : Basics of food processing Practical - BV 136.1P
Course Outcomes:
CO1: Outline the process of red and white meat slaughter, explain meat structure and inspect meat quality parameters. CO2: Demonstrate processing techniques used to produce a variety of Food Products. CO3: Work in teams to develop communication skills and company Good Manufacturing Practices
Subject and code -FUNDAMENTALS OF FOOD CHEMISTRY AND MICROBIOLOGY - BV-134.1
Course Outcomes:
CO1 : Students shall be aware of the underlying chemistry, properties and effects of processing on food components. CO2: Understanding of food components reactions and their impact on sensory, nutritional, and functional properties of foods. CO3: Ability to integrate chemistry and biochemistry principles into real-world food science and nutritional problems..
Subject and code: FUNDAMENTALS OF FOOD CHEMISTRY AND MICROBIOLOGY - BV-137.1P
Course Outcomes:
CO1 : Students shall be aware of the underlying chemistry, properties and effects of processing on food components. CO2: Understanding of food components reactions and their impact on sensory, nutritional, and functional properties of foods. CO3: Ability to integrate chemistry and biochemistry principles into real-world food science and nutritional problems..
Project/ Internship - BV138.1P
Semester- II
Subject and code: FUNDAMENTALS OF FOOD & NUTRITION - BV-133.2
Course Outcomes:
CO1: Demonstrate knowledge and understanding of the fundamental concepts in food and nutrition. CO2: Demonstrate an in-depth knowledge of the roles and functions of principal nutrients and an awareness of functional foods. CO3: Demonstrate an understanding of the processes involved in digestion, absorption, metabolism and utilisation of each of the macronutrients and major vitamins and minerals..

Subject and code : FUNDAMENTALS OF FOOD & NUTRITION - BV-136.2P
Course Outcomes:
CO1: Demonstrate knowledge and understanding of the fundamental concepts in food and nutrition. CO2: Demonstrate an in-depth knowledge of the roles and functions of principal nutrients and an awareness of functional foods. CO3: Demonstrate an understanding of the processes involved in digestion, absorption, metabolism and utilisation of each of the macronutrients and major vitamins and minerals..
Subject and code : – BASICS OF FOOD SAFETY AND REGULATORY ACT BV-134.2
Course Outcomes:
CO1: To create and understand the quality control and assurance system in food industry. CO2: To understand the risk assessments procedure for food sector. CO3: GMPs and GHP regulations in the food sector.
Subject and code PRACTICAL PAPER II Basics of Food Safety and Regulatory Act) - BV-137.2P
Course Outcomes:
CO1: Demonstrate knowledge and understanding of the fundamental concepts in food and nutrition. CO2: Demonstrate an in-depth knowledge of the roles and functions of principal nutrients and an awareness of functional foods. CO3: Demonstrate an understanding of the processes involved in digestion, absorption, metabolism and utilisation of each of the macronutrients and major vitamins and minerals..
Project/ Internship - BV138.2P
Semester- III
Subject and code: INTRODUCTION TO FRUIT AND VEGETABLE PROCESSING - BV 133.3
Course Outcomes:
CO1: The students shall be able to understand Biological, Chemical & Physical Properties of Fruits & Vegetables. CO2: The students shall be able to understand Technologies involved in Processing, Preservation & Value- Addition of Fruits & Vegetables. CO3: Students shall be able to understand Industrial Processes for Commercial Production of Jams, Jellies, Marmalade, Fruit Juices, Concentrates.
Subject and code: INTRODUCTION TO FRUIT AND VEGETABLE PROCESSING - BV 136.3P
Course Outcomes:
CO1: The students shall be able to understand Biological, Chemical & Physical Properties of Fruits & Vegetables. CO2: The students shall be able to understand Technologies involved in Processing, Preservation & Value- Addition of Fruits & Vegetables. CO3: Students shall be able to understand Industrial Processes for Commercial Production of Jams, Jellies, Marmalade, Fruit Juices, Concentrates.
Subject and code :INTRODUCTION TO CEREALS, LEGUME AND OIL SEEDS - BV 134.3

Course Outcomes:
CO1 A greater in-depth understanding of the science and technology associated with grain processing. CO2: Skills in observation, critical analysis and report writing. CO3:An ability to derive, interpret and evaluate social, technical and economic information from a wide variety of sources. CO4: Capacity for independent critical thought, rational inquiry and self-directed learning and research.
Subject and code: INTRODUCTION TO CEREALS, LEGUME AND OIL SEEDS - BV 137.3P
Course Outcomes:
CO1 A greater in-depth understanding of the science and technology associated with grain processing. CO2: Skills in observation, critical analysis and report writing. CO3: An ability to derive, interpret and evaluate social, technical and economic information from a wide variety of sources. CO4: Capacity for independent critical thought, rational inquiry and self-directed learning and research.
Project/ Internship - BV138.3P
Semester- IV
Subject and code: INTRODUCTION TO DAIRY TECHNOLOGY BV 133.4
Course Outcomes:
CO1: How to do sampling of milk and milk products. CO2: Physical, Chemical & Microbial analysis of milk and milk products. CO3: Development of different milk products.
Subject and code: INTRODUCTION TO DAIRY TECHNOLOGY PRACTICAL - BV 136.4P
Course Outcomes:
CO1: How to do sampling of milk and milk products. CO2: Physical, Chemical & Microbial analysis of milk and milk products. CO3: Development of different milk products.
Subject and code : INTRODUCTION TO MEAT, FISH AND POULTRY PROCESSING - BV 134.4
Course Outcomes:
CO1: . Student shall know about the significance & necessity of organized animal product sector. CO2. Students shall acquire the ability of value- addition to Meat, Poultry, Egg & Fish. CO3. Student shall be well versed with processing, preservation & quality control of Meat, Egg & Fish in Food Industry
Subject and code: INTRODUCTION TO MEAT, FISH AND POULTRY PROCESSING Practical - BV 137.4P
Course Outcomes:
CO1: . Student shall know about the significance & necessity of organized animal

product sector.

CO2. Students shall acquire the ability of value- addition to Meat, Poultry, Egg & Fish.

CO3. Student shall be well versed with processing, preservation & quality control of Meat, Egg & Fish in Food Industry

PROJECT/INTERNSHIP 138.4P

Semester- V

Subject and code : INTRODUCTION TO BAKERY, AND CONFECTIONERY PROCESSING - BV 131.5

Course Outcomes:

CO1: Students learn about the manufacturing of confectionary products.

CO2: Students learn how to maintain hygiene and cleanliness in a bakery, including safety precautions

CO3: Students learn about the various types of packaging materials used for confectionary.

Subject and code: -FOOD ENGINEERING AND DRYING TECHNIQUES - BV-132.5

Course Outcomes:

CO1: Students learn about the process of removing moisture from food to prevent spoilage by bacteria, yeasts, and molds.

CO2: Students learn about industry practices, including standard procedures, preservation methods, food laws, and certification requirements.

CO3: Students learn about food concentration, including drying milk solids.

Subject and code: INTRODUCTION TO FERMENTATION TECHNOLOGY BV 133.5

Course Outcomes:

CO1: Evaluate factors that contribute in enhancement of cell and product formation during fermentation process.

CO2: Analyse kinetics of cell and product formation in batch, continuous and fed-batch cultures

Subject and code : INTRODUCTION TO FERMENTATION TECHNOLOGY AND FOOD ENGINEERING AND DRYING TECHNIQUES (Practical) BV 136.5P

Course Outcomes:

CO1: Evaluate factors that contribute in enhancement of cell and product formation during fermentation process.

CO2: Analyse kinetics of cell and product formation in batch, continuous and fed-batch cultures

CO3: Students learn about the process of removing moisture from food to prevent spoilage by bacteria, yeasts, and molds.

CO4: Students learn about industry practices, including standard procedures, preservation methods, food laws, and certification requirements.

CO5: Students learn about food concentration, including drying milk solids.

Subject and code: FOOD ADDITIVES AND PRESERVATIVES - BV 134.5

Course Outcomes:

CO1: Students will learn about food safety measures and quality control concepts. .

CO2: Students will learn about the physical and chemical structures of food components, and the chemical reactions that occur during food preparation, preservation, and storage.
CO3: Students will learn about the importance of food additives and contaminants.

Subject and code: INTRODUCTION TO BAKERY AND CONFECTIONARY PROCESSING AND FOOD ADDITIVES AND PRESERVATIVES - BV 136.5P

Course Outcomes:

CO1: Students will learn about food safety measures and quality control concepts. .
CO2: Students will learn about the physical and chemical structures of food components, and the chemical reactions that occur during food preparation, preservation, and storage.
CO3: Students will learn about the importance of food additives and contaminants.

Project/ Internship - BV137.5P

Semester- VI

Subject and code: ENTREPRENEURSHIP AND AGRIBUSINESS MANAGEMENT - BV 131.6

Course Outcomes:

CO1: Students learn about market analysis, agri-marketing strategies, and brand management. .
CO2: Students learn about environmentally friendly and socially responsible practices.

Subject and code: BASICS OF FOOD PACKAGING - BV 132.6

Course Outcomes:

CO1: Students learn about the materials used for food packaging
CO2: Students learn about different food preservation techniques about the importance of food safety and food quality .
CO3: Students will gain knowledge on getting value-added products from wastes

Subject and code: BASICS OF FOOD PACKAGING AND WASTE MANAGEMENT - BV 135.6P

Course Outcomes:

CO1: Students learn about market analysis, agri-marketing strategies, and brand management. .
CO2: Students learn about environmentally friendly and socially responsible practices.
CO3: Students learn about the materials used for food packaging
CO4: Students learn about different food preservation techniques about the importance of food safety and food quality .

Subject and code: WASTE MANAGEMENT IN FOOD INDUSTRY - BV 133.6

Course Outcomes:

CO1: Students will attain knowledge about the methods of managing food wastes.
CO2: Students will gain knowledge on the methods for utilization of food wastes.
CO3: Students will gain knowledge on getting value-added products from wastes

Subject and code: SPICES AND PLANTATION CROP TECHNOLOGY - BV 134.6

Course Outcomes:

CO1: To gain knowledge in processing of plantation crops and spices and also its value added products.

CO2: To outline ways in which quality loss can be minimised during preparation and processing
CO3: To develop value added products from plantation products and spices
Subject and code: SPICES AND PLANTATION CROP TECHNOLOGY (PRACTICALS) - BV 136.6P
Course Outcomes
CO1: Students will attain knowledge about the methods of managing food wastes.
CO2: Students will gain knowledge on the methods for utilization of food wastes.
CO3: Students will gain knowledge on getting value-added products from wastes
CO4: To gain knowledge in processing of plantation crops and spices and also its value added products.
CO5: To outline ways in which quality loss can be minimised during preparation and processing
CO6: To develop value added products from plantation products and spices
PROJECT/INTERNSHIP BV137.6P

Department Name:	BV 150 B Voc (ANIMATION AND MULTIMEDIA
PROGRAMME OUTCOMES	
PO1. It offers many career profiles for trained and qualified candidates.	
PO2: It can educate them with the specific know-how about the various subject areas such as Animation Film Production and Pre-Production	
PO3: It widens the creative talent and improves technical skills, gives more focus on visualization techniques improve communication skill with good networking skills, flexibility to work on different aspects of animation..	
PROGRAMME SPECIFIC OUTCOMES	
PSO 1 : Understand the basic elements of art and/or design through art analysis PSO2 : Learn how to use materials, tools and processes, effectively and safely to create original works of art.	
PSO3: Develop creative problem-solving strategies as a means to create strong artwork. Identify Western art in detail	
Semester- I	
Subject and code: History of Animation - BV 153.1	
Course Outcomes:	
CO1: Describe past history of origin of animation.	
CO2: Understand the emergence of animation from different countries.	
CO3: Understand the importance and the rise of computer animation	
Subject and code: Computer Graphics Design - BV 154.1	

Course Outcomes:
CO1: Gain awareness of common computer graphics software. CO2: To understand different vector and Bitmap shapes and designs. CO3: Enhance their ability to design and learn implementation of colors
Subject and code: Stop Motion lab - BV 156.1P
Course Outcomes:
CO1: Analyse, evaluate and critically reflect on stop motion works and texts; CO2: Apply pre-production techniques and design methodology, including storyboarding and animatic creation; CO3: Demonstrate creative thinking when combining fundamental principles of visual and narrative design with motion principles;
Subject and code: Computer Fundamentals Lab - BV 157.1P
Course Outcomes:
CO1: introduced to computer hardware and its various components. CO2: Understanding different hardware devices and their applications. CO3: Get the knowledge of MS Office, its options, features.
PROJECT – 1 - BV 158.1P
Semester- II
Subject and code: Foundation Art - BV 153.2
Course Outcomes:
CO1: Understand the basic elements of art and/or design through art analysis. CO2: Learn how to use materials, tools and processes, effectively and safely to create original works of art. CO3: Develop creative problem-solving strategies as a means to create strong artwork.
Subject and code: 3D Modelling - BV 154.2
Course Outcomes:
CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space CO2: Creating different types of polygon models CO3: Creating 3D objects using line & NURBS CO4: Creating interior designs & exterior designs CO5: Rendering and exporting 3D files in different image file formats. CO6: Create different 3D environments, models, structures, architectures. CO7: Understanding how mesh works in 3D modelling.
Subject and code: Script Writing & Storyboarding Lab - BV 156.2P
Course Outcomes:
CO1: Create a story which involves turning points, setups, climax. etc. CO2: Create a series of legible storyboard as required by the script. CO3: Understand Pre- Production process
Subject and code: 3D Modelling Lab - BV 157.2P

Course Outcomes:
CO1: Knowledge about using 3D applications and understand the fundamental skills of 3D space
CO2: Creating different types of polygon models
CO3: Creating 3D objects using line & NURBS
CO4: Creating interior designs & exterior designs
CO5: Rendering and exporting 3D files in different image file formats.
CO6: Create different 3D environments, models, structures, architectures.
CO7: Understanding how mesh works in 3D modelling.
PROJECT - 2 - BV 158.2P
Semester- III
Subject and code: 2D Animation - BV 153.3
Course Outcomes:
CO1: Gain knowledge about fundamental skills to produce traditional style animation.
CO2: Have a better understanding about timeline, tools and features of the software.
Subject and code: Production Techniques - BV 154.3
Course Outcomes:
CO1: Understanding the process of voice tracking.
CO2: Implementing the concepts of transitions, layering, Video capture.
CO3: Learning different types of audio/ video formats
Subject and code: Production Techniques Lab -BV 156.3P
Course Outcomes:
CO1: Understanding the process of voice tracking.
CO2: Implementing the concepts of transitions, layering, Video capture.
CO3: Learning different types of audio/ video formats
Subject and code: Comic Art & Design Lab - BV 157.3P
Course Outcomes:
CO1: Generate a balanced knowledge in the humanities, both in and out of the sequential art field.
CO2: Use the potential of comics to disseminate a wide range of information
CO3: Exhibit knowledge of professional workflow, expectation, and market
PROJECT - 3 - BV 158.3P
Semester- IV
Subject and code: 3D Texturing & Lighting - BV 153.4
Course Outcomes:
CO1: Give detailed texturing and colouring to 3D characters or objects.

CO2: Learn the importance of shaders and how to apply it.

CO3: Understand different mapping done to enhance the details of the object.

Subject and code: Web technology - BV 154.4

Course Outcomes:

CO1: Create and design websites.

CO2: Understand the development process and its principles to create a website.

CO3: Create different types of websites themes and do different modifications onto websites.

Subject and code: 3D Texturing & Lighting Lab - BV 156.4P

Course Outcomes:

CO1: Give detailed texturing and colouring to 3D characters or objects.

CO2: Learn the importance of shaders and how to apply it.

CO3: Understand different mapping done to enhance the details of the object.

Subject and code: Web technology Lab - BV 157.4P

Course Outcomes:

CO1: Create and design websites.

CO2: Understand the development process and its principles to create a website.

CO3: Create different types of websites themes and do different modifications onto websites.

PROJECT - 4 - BV 158.4P

Semester- V

Subject and code: 3D RIGGING & ANIMATION - BV 151.5

Course Outcomes:

CO1: Develop skills in creating objects and character animations.

CO2: Understand the fundamental features of different controllers, wraps and modifiers, poses and postures.

CO3: Work with bone parameters and IK Solvers

Subject and code: 3D ANIMATION LAB - BV 156.5P

Course Outcomes:

CO1: Develop skills in creating objects and character animations.

CO2: Understand the fundamental features of different controllers, wraps and modifiers, poses and postures.

CO3: Work with bone parameters and IK Solvers

Subject and code: 2D CHARACTER & ENVIORNMENT SKETCHING- BV 152.5

Course Outcomes:
CO1: Study user interface of Fusion along with features & applications. CO2: Develop skills in understanding node based features
Subject and code: VISUAL EFFECTS - BV 153.5
Course Outcomes:
CO1: Study user interface of Fusion along with features & applications. CO2: Develop skills in understanding node based features. CO3: Get acquainted with the knowledge of rotoscoping, keying, tracking etc using node based technology
Subject and code: VIDEO COMPOSITING LAB - BV 155.5P
Course Outcomes:
CO1: Study user interface of Fusion along with features & applications. CO2: Develop skills in understanding node based features. CO3: Get acquainted with the knowledge of rotoscoping, keying, tracking etc using node based technology
Subject and code: INTERACTIVE ANIMATION - BV 154.5
Course Outcomes:
CO1: educate students on creating convincing characters by using their creative skills. CO2: Design, create, and edit a flash based navigation menus and interactive movie
PROJECT 5 - BV 157.5P
Semester- VI
Subject and code: UI/ UX DESIGN - BV 151.6
Course Outcomes:
CO1: learn human-centered design methods and rhetoric that ground your design in the needs of the public. CO2: learn how to use interaction design and design systems through industry-standard quality assurance methods, and how to design and implement user interfaces to follow corporate strategies.
Subject and code: ADVANCED CHARACTER ILLUSTRATION - BV 152.6
Course Outcomes:
CO1: Understand different types of characters needed for animation and gaming. CO2: Understand lightings for different conditions. CO3: Create their own characters with construction.
Subject and code: 3D Character Animation - BV 153.6
Course Outcomes:
CO1: evaluate and assemble complex 3D geometry and 3D animation techniques;

CO2: Formulate and enact 3D motion capture sequences;
CO3: Devise and create 3D animated sequences featuring 3D characters and environments.

Subject and code: 3D SCULPTURE DESIGN - BV 154.6

Course Outcomes:

CO1: Create realistic digital sculpting using ZBrush.
CO2: Understand the workspace, buttons and palettes and use it more efficiently.
CO3: Create desired UV textures to give more subtle look to 3D characters or objects.

Subject and code: DYNAMICS LAB - BV 155.6P

Course Outcomes:

CO1: Create dynamic particle effects using particle systems.
CO2: Gain knowledge about 2D and 3D Fluid systems.
CO3: To Understand Active Passive Colliders.

Subject and code: Digital Compositing Lab - BV156.6P

Course Outcomes:

CO1: evaluate and assemble complex 3D geometry and 3D animation techniques;
CO2: Formulate and enact 3D motion capture sequences;
CO3: Devise and create 3D animated sequences featuring 3D characters and environments.

Project-6 - BV 157.6P

Department Name:	BV 160 B Voc (RENEWABLE ENERGY MANAGEMENT)
PROGRAMME OUTCOMES	

PO1: To create several self-employment opportunities in renewable energy and energy efficiency sectors

PO2: Become an expert in theoretical as well as practical aspects of renewable energy technologies, energy conservation, and management

PO3: Develop a thorough understanding of Renewable energy resources like solar energy, wind energy, tidal energy etc.

PO4: Participate in training programs like Hands on Training (HOT), On the Job Training (OJT) in Renewable energy Industries that enhances their ability to work

PROGRAMME SPECIFIC OUTCOMES

PSO 1 : Vocational training in the areas of renewable, clean energy, and energy management.

PSO2: Advanced understanding of the effect of human activities on the environment.

PSO3: Lessons in the socio-economic and business issues influencing delivery of the technology.

Semester- I

Subject and code: Fundamentals of Physics - BV 173.1

Course Outcomes:

CO1: Ability to correlate different physical parameters required for the functioning of energy devices

CO2: Understand the functioning of various renewable energy devices

Subject and code: Basic Electronics - BV 174.1

Course Outcomes:

CO1: Understand the basic terminology/definitions of electrical and electronics engineering

CO2. Apply the knowledge of theorems/laws to analyze the simple circuits

CO3. Use the principles of electromagnetic induction in electrical applications.

Subject and code: Fundamentals of Physics- Lab - BV 176.1P

Course Outcomes:

CO1: Ability to correlate different physical parameters required for the functioning of energy devices

CO2: Understand the functioning of various renewable energy devices

Subject and code: Basic Electronics Lab - BV 177.1P

Course Outcomes:

CO1: Understand the basic terminology/definitions of electrical and electronics engineering

CO2. Apply the knowledge of theorems/laws to analyze the simple circuits

CO3. Use the principles of electromagnetic induction in electrical applications.

I SEMESTER INTERNSHIP - BV 178.1P

Semester- II

Subject and code: PHOTOMETRY, HEAT AND THERMODYNAMICS - BV 173.2

Course:
CO1: have a clear and basic of fundamental concept of photometry in order to estimate available light energy. CO2: demonstrate the capability of designing and developing energy harvesting devices solar water heaters, solar cookers and heat pumps. CO3: design and fabricate heat harvesting devices in order to optimize the utilization of heat energy.
Subject and code: Fundamentals of solar Energy & Photo Voltaic Technology - BV 174.2
Course Outcomes:
CO1: Students will learn how solar cells convert light into electricity, CO2: how solar cells are manufactured, how solar cells are evaluated, CO3: what technologies are currently on the market, and how to evaluate the risk CO4: potential of existing and emerging solar cell technologies.
Subject and code: PHOTOMETRY, HEAT AND THERMODYNAMICS - BV 176.2P
Course Outcomes:
CO1: have a clear and basic of fundamental concept of photometry in order to estimate available light energy. CO2: demonstrate the capability of designing and developing energy harvesting devices solar water heaters, solar cookers and heat pumps. CO3: design and fabricate heat harvesting devices in order to optimize the utilization of heat energy.
Subject and code: : Fundamentals of solar Energy & Photo Voltaic Technology Lab - BV 177.2P
Course Outcomes:
CO1: Students will learn how solar cells convert light into electricity, CO2: how solar cells are manufactured, how solar cells are evaluated, CO3: what technologies are currently on the market, and how to evaluate the risk CO4: potential of existing and emerging solar cell technologies.
II SEMESTER INTERNSHIP - BV 178.2P
Semester- III
Subject and code: Basics of Computer Application - BV 173.3
Course Outcomes:
CO1: Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems. CO2: Design, correctly implement and document solutions to significant computational problems. CO3: Analyze and compare alternative solutions to computing problems.
Subject and code: Basics of Electricity - BV 174.3

Course Outcomes:
CO1: To enable the students to design and troubleshoot electrical circuits, networks and appliances through hands-on mode.
CO2: To develop the basic understanding of household electrical networking and its function.
Subject and code Basics of Computer Application Lab - BV 176.3P
Course Outcomes:
CO1: Apply algorithmic, mathematical and scientific reasoning to a variety of computational problems.
CO2: Design, correctly implement and document solutions to significant computational problems.
CO3: Analyze and compare alternative solutions to computing problems.
Subject and code: Basics of Electricity Lab - BV 177.3P
Course Outcomes:
CO1: To enable the students to design and troubleshoot electrical circuits, networks and appliances through hands-on mode.
CO2: To develop the basic understanding of household electrical networking and its function.
III SEMESTER INTERNSHIP - BV 178.3P
Semester- IV
Subject and code: Storage Devices and Invertors - BV 173.4
Course Outcomes:
CO1: List types of batteries and their operating principles.
CO2: Demonstrate battery maintenance and testing techniques.
CO3: Utilize correctly the various types of test equipment and hand tools
Subject and code: Fluid Mechanics - BV 174.4
Course Outcomes:
CO1: Develop an ability in basic fundamental concepts of hydrostatics and hydrodynamics.
CO2: Calculate and estimate the amount of available energy for the end utilization for maximum efficiency
CO3: Select and suggest suitable energy storing mechanisms depending on the available resources in the environment and also go for higher studies in the relevant field
Subject and code: Storage Devices and Invertors Lab - BV 176.4P
Course Outcomes:
CO1: List types of batteries and their operating principles.
CO2: Demonstrate battery maintenance and testing techniques.
CO3: Utilize correctly the various types of test equipment and hand tools

Subject and code: Fluid Mechanics Lab - BV 177.4P
Course Outcomes:
CO1: Develop an ability in basic fundamental concepts of hydrostatics and hydrodynamics. CO2: Calculate and estimate the amount of available energy for the end utilization for maximum efficiency CO3: Select and suggest suitable energy storing mechanisms depending on the available resources in the environment and also go for higher studies in the relevant field
IV SEMESTER INTERNSHIP- BV 178.4P
Semester- V
Subject and code: BIOMASS ENERGY - BV 172.5
Course Outcomes:
CO1: Learn the various methods of harvesting biomass. CO2: Gain knowledge in converting biomass into fuel. CO3: Suggest various techniques of utilization of biomass.
Subject and code: BIOMASS ENERGY LAB - BV 175.5P
Course Outcomes:
CO1: Learn the various methods of harvesting biomass. CO2: Gain knowledge in converting biomass into fuel. CO3: Suggest various techniques of utilization of biomass.
Subject and code: Geothermal Energy - BV 173.5
Course Outcomes:
CO1: Develop an ability in basic fundamental concepts of tapping geothermal energy. CO2: Suggest appropriate designs for tapping geothermal energy based on locations
Subject and code: Geothermal Energy LAB - BV 176.5P
Course Outcomes:
CO1: Develop an ability in basic fundamental concepts of tapping geothermal energy. CO2: Suggest appropriate designs for tapping geothermal energy based on locations
V SEMESTER INTERNSHIP - BV 177.5P
Semester- VI
Subject and code: INSTALLATION AND MAINTENANCE OF RENEWABLE ENERGY DEVICES - BV 173.6
Course Outcomes:
CO1: Course focus is on solar power projects development and quality management. CO2: The participants will gain knowledge and will have the opportunity to understand renewable energy project management, site assessment and planning, feasibility study and detailed project report preparation. CO3: Design and installation best practices, PV system performance modelling and energy yield assessment, Hands on training on consideration of various factors, inspection procedure and quality assurance

Subject and code: Materials and Processes in Manufacturing - BV 174.6	
Course Outcomes:	
CO1: demonstrate the capability of selecting suitable manufacturing processes to manufacture the products optimally, CO2: ability to clear basic fundamental concepts of machining, welding, casting, forming processes CO3: selecting or suggesting suitable manufacturing processes to achieve the required products with the aim of avoiding material and time wastage.	
Subject and code: INSTALLATION AND MAINTENANCE OF RENEWABLE ENERGY DEVICES LAB - BV 175.6P	
Course Outcomes:	
CO1: Course focus is on solar power projects development and quality management. CO2: The participants will gain knowledge and will have the opportunity to understand renewable energy project management, site assessment and planning, feasibility study and detailed project report preparation. CO3: Design and installation best practices, PV system performance modelling and energy yield assessment, Hands on training on consideration of various factors, inspection procedure and quality assurance	
Subject and code: Materials and Processes in Manufacturing LAB - BV 176.6P	
Course Outcomes:	
CO1: demonstrate the capability of selecting suitable manufacturing processes to manufacture the products optimally, CO2: ability to clear basic fundamental concepts of machining, welding, casting, forming processes CO3: selecting or suggesting suitable manufacturing processes to achieve the required products with the aim of avoiding material and time wastage.	
Course Outcomes:	
CO1: Learn the various methods of harvesting biomass. CO2: Gain knowledge in converting biomass into fuel. CO3: Suggest various techniques of utilization of biomass.	
VI SEMESTER INTERNSHIP - BV 177.6P	

Department Name:	BV 170 B Voc SOFTWARE DEVELOPMENT
PROGRAMME OUTCOMES	
PO1: Understand, Analyze and Develop computer programs in the areas related to Object-oriented concepts, Web designing and Algorithms. PO2: Develops the necessary skills to make a career in the field of computers. PO3: Building ability to work as a member or leader of a team in multi disciplinary	

environment.

PO4: Develops the ability to select modern computing tools, skills and technique necessary for innovative software solutions.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Producing knowledgeable and skilled human resources to be employable in IT Industry.

PSO2: Exploring the skills of students to become entrepreneurs who can develop customized solutions for small and medium enterprises.

Semester- I

Subject and code: Programming in C - BV 163.1

Course Outcomes:

CO1: Read, understand and trace the execution of programs written in C language

CO2: Write the C code for a given problem

CO3: Perform input and output operations using programs in C

CO4: Write programs that perform operations on arrays

Subject and code: Information Technology Tools - BV 164.1

Course Outcomes:

CO1: Understand the fundamentals of computer system

CO2: Identify different components within the computer system

CO3: Understand different types of input and output devices

CO4: Demonstrate the working concepts of different devices connected to computer

CO5: Explain different generations of programming languages and their significance

CO6: Understand the use of Word processing, Spreadsheet, Presentation and DBMS applications

CO7: Understand Digital computer and digital systems functioning

Subject and code: Programming in C lab -BV 166.1P

Course Outcomes:

CO1: Read, understand and trace the execution of programs written in C language

CO2: Write the C code for a given problem

CO3: Perform input and output operations using programs in C

CO4: Write programs that perform operations on arrays

Subject and code: Information Technology Tools Lab - BV 167.1P

Course Outcomes:

CO1: Understand the fundamentals of computer system

CO2: Identify different components within the computer system

CO3: Understand different types of input and output devices

CO4: Demonstrate the working concepts of different devices connected to computer

CO5: Explain different generations of programming languages and their significance

CO6: Understand the use of Word processing, Spreadsheet, Presentation and DBMS applications

CO7: Understand Digital computer and digital systems functioning

Project 1 - BV 168.1

Semester- II
Subject and code: Web Designing -BV 163.2
Course Outcomes:
CO1: Understand features of Internet and email CO2: Develop Simple web pages using HTML & Style Sheets CO3: Develop interactive web page using scripting language.
Subject and code: Relational Database Management System - BV 164.2
Course Outcomes:
CO1: Understand the basic concepts and the applications of database systems. CO2: Master the basics of SQL and construct queries using SQL. CO3: Understand the relational database design principles.
Subject and code : Web Designing Lab - BV 166.2P
Course Outcomes:
CO1: Understand features of Internet and email CO2: Develop Simple web pages using HTML & Style Sheets CO3: Develop interactive web page using scripting language.
Subject and code : Relational Database Management System Lab BV 167.2P
Course Outcomes:
CO1: Understand the basic concepts and the applications of database systems. CO2: Master the basics of SQL and construct queries using SQL. CO3: Understand the relational database design principles.
Project 2 - BV 168.2
Semester- III
Subject and code: Java Programming - BV 163.3
Course Outcomes:
CO1: Know the structure and model of the Java programming language CO2: Develop software using the Java programming language and Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems.
Subject and code: Web Programming using PHP - BV 164.3
Course Outcomes:
CO1: Be able to setup and configure MySQL, PHP, Apache web server development environment. CO2: Understand Object oriented programming paradigm in PHP. And build a simple, functional web application using PHP/MySQL.
Subject and code: Java Programming Lab - BV 166.3P

Course Outcomes:
CO1: Know the structure and model of the Java programming language
CO2: Develop software using the Java programming language and Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems.
Subject and code Web Programming using PHP Lab - BV 167.3P
Course Outcomes:
CO1: Be able to setup and configure MySQL, PHP, Apache web server development environment.
CO2: Understand Object oriented programming paradigm in PHP. And build a simple, functional web application using PHP/MySQL.
Project 3 - BV 168.3
Semester- IV
Subject and code: Data Structures using C - BV 163.4
Course Outcomes:
CO1: To describe the usage of various data structures
CO2: To choose the appropriate data structure to solve a programming problem.
CO3: To demonstrate various methods of organizing large amounts of data.
Subject and code: Computer Network Security - BV 164.4
Course Outcomes:
CO1: At the end of the course the students will be able to understand the architectural principles of computer networking and compare different approaches to organizing networks.
CO2: Identify core networking and infrastructure components and the roles they serve.
CO3: Students will get the technical knowledge and skills needed to protect and defend computer systems and networks
Subject and code: Data Structures using C Lab - BV 166.4P
Course Outcomes:
CO1: To describe the usage of various data structures
CO2: To choose the appropriate data structure to solve a programming problem.
CO3: To demonstrate various methods of organizing large amounts of data.
.
Subject and code: Computer Network Security Lab - BV 167.4P
Course Outcomes:
CO1: At the end of the course the students will be able to understand the architectural principles of computer networking and compare different approaches to organizing networks.

CO2: Identify core networking and infrastructure components and the roles they serve. CO3: Students will get the technical knowledge and skills needed to protect and defend computer systems and networks
Project 4 - BV 168.4
Semester- V
Subject and code: JAVA 2 ENTERPRISE EDITION - BV 161.5
Course Outcomes:
CO1: At the end of the course students will be able to Design/Develop Program CO2: Develop appropriate data model and database scheme CO3: Create and test prototypes
Subject and code: JAVA 2 ENTERPRISE EDITION LAB - BV 165.5P
Course Outcomes:
CO1: At the end of the course students will be able to Design/Develop Program CO2: Develop appropriate data model and database scheme CO3: Create and test prototypes
Subject and code: Operating System Concepts - BV 162.5
Course Outcomes:
CO1 At the end of the course students will able to Analyze the structure of OS and basic architectural components involved in design Analyze the various resource management techniques conceptualize the components involved in designing a contemporary OS. CO2: Learn Windows Operating system basics.
Subject and code: SOFTWARE ENGINEERING - BV 163.5
Course Outcomes:
CO-1. Assess professional and ethical responsibility, software engineering principles and activities involved in building large software programs. CO-2. Demonstrate process of requirements gathering, classification, Specification & validation. CO-3. Design models for software system, component and process Within realistic constraints. CO-4. Apply cost estimation and time scheduling for quality project Activities. CO-5. Apply, design, implement, verify, validate and maintain software Systems with metrics.
Subject and code: PYTHON PROGRAMMING - BV 164.5
Course Outcomes:
CO1: Be skilled at creating, debugging and testing a software application using the Python programming language.
Subject and code: PYTHON PROGRAMMING LAB - BV 166.5P
Course Outcomes:
CO1: Be skilled at creating, debugging and testing a software application using the Python programming language.
Project 5 - BV 167.5P

Semester- VI	
Subject and code:	LINUX AND SHELL PROGRAMMING - BV 161.6
Course Outcomes:	CO1: Identify and use UNIX/Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security. CO2: Develop shell scripts to perform more complex tasks.
Subject and code:	Shell Programming and Wireframes LAB - BV 165.6P
Course Outcomes:	CO1: Identify and use UNIX/Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security. CO2: Develop shell scripts to perform more complex tasks.
Subject and code:	CLOUD COMPUTING - BV 162.6
Course Outcomes:	CO1: Understand the concepts, characteristics, delivery models and benefits of cloud computing CO2: Understand the key security and compliance challenges of cloud computing
Subject and code:	ANDROID APPLICATION DEVELOPMENT - BV 163.6
Course Outcomes:	CO1: Install and configure Android application development tools. CO2: Design and develop user Interfaces for the Android platform. CO3: Save state information across important operating system events. CO4: Apply Java programming concepts to Android application development.
Subject and code:	ANDROID APPLICATION DEVELOPMENT LAB - BV 166.6P
Course Outcomes:	CO1: Install and configure Android application development tools. CO2: Design and develop user Interfaces for the Android platform. CO3: Save state information across important operating system events. CO4: Apply Java programming concepts to Android application development.
Subject and code:	INTERNET OF THINGS - BV 164.6
Course Outcomes:	CO1: identify the Components that forms part of IoT Architecture. CO2: determine the most appropriate IoT Devices and Sensors based on Case Studies. CO3: setup the connections between the Devices and Sensors. CO4: evaluate the appropriate protocol for communication between IoT. CO5: analyse the communication protocols for IoT.
Project 6 - BV 167.6P	

Department Name:	GENERAL ENGLISH
PROGRAMME OUTCOMES	

PO1: Students undergoing the program will improve their basic English language skills like reading, listening, comprehending, speaking, debating and writing
 PO2: Learners will gain confidence to use an international language and become competent global citizens in an age of globalization
 PO3: Teaching language for first generation learners
 PO4: Multicultural and multi lingual approach.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Students will improve their reading and interpreting skills by introducing them to texts on specific social, economic, cultural, political issues. Such texts through their contemporaneity will contextualize language and help students to think critically and articulate their thoughts in classroom discussions.
 PSO2: They will learn to communicate with teachers, their peers and other with speakers in public domain using English language. They will be able to read and comprehend reference materials related to core subjects of their discipline. They should be able to read English language newspapers and also understand English language content available on television and also social media platforms
 PSO3: Students should also be able to distinguish between formal, colloquial, journalistic, poetic, scientific forms and registers of language.

Course Outcomes:

CO1: reading competence through engagement with challenging texts of selected prose, poetry and short stories
 CO2: logical thinking, analytical skills and critical thinking abilities through such engagement
 CO3: Conversation skills through Dialogue Writing
 CO4: Logical thinking through completing a story by following guiding hints
 CO5: Metaphorical use of language through Idioms and Phrases
 CO6: Using appropriate Articles and Prepositions
 CO7: How to use Question Tags?
 CO8: Vocabulary building / semantics / etymology
 CO9: Skills of paraphrasing by practice of Precis Writing
 CO10: Appropriate use of collocations, Phrasal verbs and Tense forms.
 CO11: Report Writing – Business Report, Writing Minutes of meetings
 CO12: Framing ‘Wh’ Questions, Use of Active and Passive voice, Direct and Indirect speech
 CO13: Critical thinking through analyzing a Cartoon
 CO14: Grammatically correct use of Sub- Verb agreement

Department Name:

ADDITIONAL ENGLISH

PROGRAMME OUTCOMES

PO1: Students undergoing the program will improve their basic English language skills like reading, listening, comprehending, speaking, debating and writing

PO2: Learners will gain confidence to use an international language and become competent global citizens in an age of globalization

PO3: Teaching language for first generation learners

PO4: Multicultural and multi lingual approach.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Students will improve their reading and interpreting skills by introducing them to texts on specific social, economic, cultural, political issues. Such texts through their contemporaneity will contextualize language and help students to think critically and articulate their thoughts in classroom discussions.

PSO2: They will learn to communicate with teachers, their peers and other with speakers in public domain using English language. They will be able to read and comprehend reference materials related to core subjects of their discipline. They should be able to read English language newspapers and also understand English language content available on television and also social media platforms

PSO3: Students should also be able to distinguish between formal, colloquial, journalistic, poetic, scientific forms and registers of language.

Course Outcomes:

CO1: reading competence through engagement with challenging texts of selected prose, poetry and short stories

CO2: logical thinking, analytical skills and critical thinking abilities through such engagement

CO3: Conversation skills through Dialogue Writing

CO4: Logical thinking through completing a story by following guiding hints

CO5: Metaphorical use of language through Idioms and Phrases

CO6: Using appropriate Articles and Prepositions

CO7: How to use Question Tags?

CO8: Vocabulary building / semantics / etymology

CO9: Skills of paraphrasing by practice of Precis Writing

CO10: Appropriate use of collocations, Phrasal verbs and Tense forms.

Department Name:	COMMUNICATIVE ENGLISH
<u>PROGRAM OUTCOMES</u>	
<ul style="list-style-type: none"> ➤ It is basically aimed at developing core competence in various aspects of communication most essential in occupational functions in the field of Journalism, Business and entrepreneurship. ➤ It is also intended to help students understand the difference between formal and informal use of language ➤ The focus is largely on Speaking, Writing and listening skills 	
<u>PROGRAM SPECIFIC OUTCOMES</u>	
<ul style="list-style-type: none"> ➤ Introducing students to the sounds of English language by teaching them the basics of phonetics ➤ Give students a better understanding of grammar, usage and vocabulary of English language ➤ Introduce students to writing strategies and train them in soft skills ➤ Introduce students to the specific language skills required to write for the media ➤ Develop skills of persuasion by training students in the use of rhetoric and logic in speech and writing ➤ Technical writing skills: Business English Communication ➤ Social skills through conversational language, inter-personal communication and Event Management 	
<u>Course Outcomes (CO 3)</u>	
<ul style="list-style-type: none"> ➤ Introducing Students to Sounds of English. ➤ Introducing the concept of morphology and morpho- phonemics. ➤ Enhancing LSRW skills in the students through advanced phonetics. ➤ Introducing concepts of Word Stress, Sentence Stress and Intonation. ➤ Develop the skills of Grammar and Vocabulary. ➤ prepare students for various competitive exams. ➤ language proficiency, effective presentation and skills of Interaction. ➤ understanding language skills required for broadcast media. ➤ understanding of terms such as, fact, truth, subjectivity, objectivity and bias ➤ understanding various genres of Media Writing, techniques of reporting, reviewing, interviewing and commentary. ➤ rhetorical devices in writing and speech. skills of Technical Writing ➤ Language use in blogging and its nuances, editing and indexing skills 	

Department Name:	ENGLISH MAJOR
<u>PROGRAM OUTCOMES</u>	
<ul style="list-style-type: none"> ➤ Students are introduced to various literatures from across the world alongside a survey of canonical British writers ➤ They are introduced to concepts of colonialism, post colonialism, nativism, culturalism and identity ➤ They are introduced to various critical and theoretical approaches to help them develop their critical thinking abilities 	
<u>PROGRAM SPECIFIC OUTCOMES</u>	
<ul style="list-style-type: none"> ➤ Knowledge of British social and cultural history through introduction to canonical texts of British literature ➤ Understanding of diverse cultural contexts of different nations, geographies and people through selected texts of renowned authors ➤ Understanding of Modernism through introduction to relevant texts of prose, poetry, drama and fiction of the 20th century ➤ Knowledge of concepts such as nation, nationalities, race and civilization through introduction to selected texts from the period of Indian nationalist struggle ➤ Knowledge of concepts like colony, colonization and Postcolonialism through historical understanding of relevant texts ➤ Understanding the concept of literary criticism and literary theory. Knowledge of various theories necessary for interpretation of texts ➤ Introduction to concepts and theories of culture, ideologies of culture and critical analysis of cultural aspects represented in literature ➤ Understanding concepts of gender, sexuality, hetero-normativity, patriarchy, sexism, gender relations and embodiment. 	
<u>Course Outcomes (CO 3)</u>	
<ul style="list-style-type: none"> ➤ To introduce students to the major works of English literature. ➤ To understand different periods in the history of English literature. ➤ To understand works in different genres of literature. ➤ To introduce students to Literature from various regions of the world. ➤ To give an understanding of social and cultural contexts across the world. ➤ To bring a global perspective on literature 	

- To understand the beginnings of Modernism.
- To explore the realms of Literary Modernism in English literature.
- To understand the different movements and literary styles associated with modernism.
- To understand concepts of colonialism, postcolonialism, neo-imperialism
- To analyze the social, political and historical impact of colonization and native responses to it
- To study structures of power underlying colonialism, nativism
- To understand the impact of colonization on language
- To examine literary works, theatre and films from a postcolonial perspective
- To trace the changing approaches to literary studies
- To give an understanding of the philosophical background of ancient western classical criticism
- To chart the transition from literary criticism to theory
- To give an overview of modern critical practices
- To explore concepts of Nationalism/Nation, Colonization, Gender, Caste
- To understand the socio-historical background of anti-colonial nationalism
- To locate current discourse of cultural nationalism in late Nineteenth century Social Reform Movement
- To study autobiographical, literary works, plays, fiction written in response to nationalism, partition and post-colonial nation-state
- To understand the historical evolution of the meanings of culture
- To understand the distinction between symbolic culture and culture as lived practice
- To explore cultural identities of race, class, gender and nation in literary texts
- To examine cultural signifiers in visual and literary texts
- To understand the concept of gender as a social construct
- To examine the ideological underpinnings of masculinity, femininity
- To analyse the alternate nature of sexuality
- To examine the ways in which gender intersects with different categories such as class, race, nation

Department Name:	ಕನ್ನಡ ಐಚ್ಛಿಕ ಪತ್ರಿಕೆ
-------------------------	-----------------------------

ಕನ್ನಡ ಐಚ್ಛಿಕ ಪತ್ರಿಕೆ ಕಾರ್ಯಕ್ರಮದ ಫಲಿತಾಂಶ (PO 2)

ಪ್ರಸ್ತಾವನೆ

ಕನ್ನಡ ಭಾಷೆ ಹಾಗೂ ಸಾಹಿತ್ಯಕ್ಕೆ ಪ್ರಾಚೀನವಾದ ಇತಿಹಾಸವಿದೆ. ಭಾರತದ ಪ್ರಾಚೀನ ಸಾಹಿತ್ಯ ಹಾಗೂ ಸಾಹಿತ್ಯ ಸಂಪನ್ನ ಭಾಷೆಗಳಲ್ಲಿ ಕನ್ನಡವೂ ಒಂದು. ಈ ಭಾಷೆಯ ಪ್ರಾಚೀನತೆ ಹಾಗೂ ಅದರಲ್ಲಿನ ಸಾಹಿತ್ಯ ಸಂಪನ್ನತೆ, ಸಾಂಸ್ಕೃತಿಕ ಮೌಲ್ಯಗಳನ್ನು ಗಮನಿಸಿ ಕೇಂದ್ರ ಸರ್ಕಾರವು ಕನ್ನಡಕ್ಕೆ ಶಾಸ್ತ್ರೀಯ ಭಾಷೆಯ ಸ್ಥಾನ-ಮಾನವನ್ನು ನೀಡಿ ಗೌರವಿಸಿದೆ. ಪ್ರಾಚೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಚಂಪೂ, ವಚನ, ರಗಳೆ, ಷಟ್ಪದಿ, ಸಾಂಗತ್ಯ, ಕೀರ್ತನೆ, ತ್ರಿಪದಿ ತತ್ವಪದ ಮೊದಲಾದ ವೈವಿಧ್ಯಮವಾದ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳು ಸೃಷ್ಟಿಯಾಗಿವೆ. ಹೊಸಗನ್ನಡ ಕಾಲಘಟ್ಟದಲ್ಲಿ ನವೋದಯ, ಪ್ರಗತಿಶೀಲ, ನಮ್ಮ ಬಂಡಾಯ, ದಲಿತ ಸಾಹಿತ್ಯ ಚಿಂತನೆಗಳು ಹುಲುಸಾಗಿ ಬೆಳೆದಿವೆ. ಇವು ನಾಡಿನ ಸಾಂಸ್ಕೃತಿಕ ಚರಿತ್ರೆಯನ್ನು ಕಟ್ಟಿಕೊಡುತ್ತವೆ. ಮುಂದಿನ ಜನಾಂಗ ಕನ್ನಡ ನಾಡು-ನುಡಿಯ, ಸಂಸ್ಕೃತಿಯ ಚಿಂತನೆಯೊಂದಿಗೆ ಸಂವೇದನಾಶೀಲವಾದ ವ್ಯಕ್ತಿತ್ವವನ್ನು ರೂಪಿಸಿಕೊಳ್ಳಲು ಕನ್ನಡ ಸಾಹಿತ್ಯ ಅಧ್ಯಯನದ ಅಗತ್ಯವಿದೆ.

ಕಾರ್ಯಕ್ರಮದ ನಿರ್ದಿಷ್ಟ ಫಲಿತಾಂಶಗಳು : (PSO 2)

- ಕನ್ನಡ ಸಾಹಿತ್ಯದ ವಿವಿಧ ಕಾಲಘಟ್ಟಗಳ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳ ಸಮಗ್ರವಾದ ಜ್ಞಾನವನ್ನು ಹೊಂದಿರುವುದು
- ನಾಡು-ನುಡಿಯ ಕುರಿತಾದ ಐತಿಹಾಸಿಕ ಪ್ರಜ್ಞೆ, ತಿಳಿವಳಿಕೆಯ ಮೂಲಕ ಸಮಕಾಲೀನ ಸಮಸ್ಯೆಗಳನ್ನು ಅರ್ಥೈಸಬಲ್ಲ ಜಾಣ್ಮೆಯನ್ನು ಬೆಳೆಸಿಕೊಂಡಿರುವುದು
- ಸಾಹಿತ್ಯ ಚರಿತ್ರೆ, ಛಂದಸ್ಸು, ವ್ಯಾಕರಣ, ಭಾಷಾವಿಜ್ಞಾನ, ಕಾವ್ಯಮೀಮಾಂಸೆಗಳ ಜ್ಞಾನಗಳನ್ನು ಸ್ಪರ್ಧಾತ್ಮಕ ಪರೀಕ್ಷೆಗಳಿಗೆ ಅನ್ವಯಿಸಿಕೊಳ್ಳುವ ಕೌಶಲ ಬೆಳೆಸಿಕೊಂಡಿರುವುದು
- ಸಾಹಿತ್ಯದ ಓದಿನ ಮೂಲಕ ಸಂವೇದನೆಗಳನ್ನು ಸೂಕ್ಷ್ಮಗೊಳಿಸಿಕೊಳ್ಳುವ ಹಾಗೂ ಚಿಂತನೆಗಳನ್ನು ಹರಿತಗೊಳಿಸಿಕೊಳ್ಳುವ ಸಾಮರ್ಥ್ಯವನ್ನು ಕರಗತ ಮಾಡಿಕೊಂಡಿರುವುದು
- ಕಾವ್ಯ, ಕಥೆ, ವಿಮರ್ಶೆ, ಹರಟೆ, ಚುಟುಕು, ಹಾಸ್ಯ ಬರಹಗಳು, ನುಡಿಚಿತ್ರ ಮೊದಲಾದವುಗಳನ್ನು ರಚಿಸಬಲ್ಲ ಸೃಜನಶೀಲತೆಯನ್ನು ಬೆಳೆಸಿಕೊಂಡಿರುವುದು |
- ಸ್ಪರ್ಧಾತ್ಮಕ ಪರೀಕ್ಷೆಗಳಿಗೆ ಬೇಕಾದ ಜ್ಞಾನ ಕೌಶಲಗಳನ್ನು ಬೆಳೆಸಿಕೊಂಡಿರುವುದು

ಪದವಿಯ ಫಲಿತಾಂಶಗಳು (COs)

- ಹೊಸಗನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಸ್ವ ರೂಪ, ಲಕ್ಷಣ, ವ್ಯಾಪ್ತಿಮೊದಲಾದ ಅರಿವನ್ನು ಬೆಳೆಸಿ ಹೊಸಗನ್ನಡಕಾವ್ಯ, ನಾಟಕಗಳನ್ನು ಓದುವ, ವಿಶ್ಲೇಷಿಸುವ, ವಿಮರ್ಶಿಸುವ ಜ್ಞಾನಗಳಿಸಿಕೊಂಡಿರುವುದು
- ನಡುಗನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಸ್ವರೂಪ, ಲಕ್ಷಣ, ವ್ಯಾಪ್ತಿ ಮೊದಲಾದ ಅರಿವನ್ನು ಬೆಳೆಸಿಕೊಂಡಿರುವುದು
- ನಡುಗನ್ನಡ ಕಾವ್ಯ ಪ್ರಕಾರಗಳ ಸ್ವರೂಪ, ಲಕ್ಷಣಗಳನ್ನು, ವಸ್ತು ವೈವಿಧ್ಯವನ್ನು ಪರಿಚಯ ಮಾಡಿಕೊಂಡಿರುವುದು
- ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿಯ ಸ್ವರೂಪ, ಲಕ್ಷಣಗಳ ಜ್ಞಾನವನ್ನು ಪಡೆದುಕೊಂಡಿರುವುದು
- ಕನ್ನಡ ಛಂದಸ್ಸಿನ ಚರಿತ್ರೆಯ ಹಾಗೂ ವಿವಿಧ ಪ್ರಕಾರಗಳು, ಅವುಗಳ ಲಕ್ಷಣಗಳ ಅರಿವು ಮೂಡಿಸಿಕೊಂಡಿರುವುದು
- ನಡುಗನ್ನಡ ಹಾಗೂ ಹಳಗನ್ನಡ ಪದ್ಯಗಳಿಗೆ ಪ್ರಸ್ತಾರ ಹಾಕುವ, ಛಂದಸ್ಸನ್ನು ಕಂಡುಕೊಳ್ಳುವ ಕೌಶಲವನ್ನು ಬೆಳೆಸಿಕೊಂಡಿರುವುದು
- ಜನಪದ ಸಾಹಿತ್ಯದ ಸ್ವ ರೂಪ, ಲಕ್ಷಣಗಳ ಅರಿವು, ಜನಪದ ಸಾಹಿತ್ಯ ಪ್ರಕಾರಗಳು, ವಿವಿಧ ಜನಪದ ಕಲಾ ಪ್ರಕಾರಗಳು, ಜನಪದ ರಂಗಭೂಮಿ, ಜನಪದ ದೈವಗಳು, ಜನಪದ ಕ್ರೀಡೆಗಳು ಮೊದಲಾದ ವಿಚಾರಗಳ ಕುರಿತು ಸ್ಪಷ್ಟವಾದ ಅರಿವು ಹೊಂದಿರುವುದು
- ಪ್ರಾಚೀನ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಚರಿತ್ರೆಯ ಅರಿವನ್ನು ಹೊಂದಿರುವುದು
- ಶಾಸನ ಸಾಹಿತ್ಯ ಅವುಗಳ ಸ್ವ ರೂಪ, ಲಕ್ಷಣಗಳು ಹಾಗೂ ಅವುಗಳ ಐತಿಹಾಸಿಕತೆ ಇವುಗಳ ಅರಿವು ಮೂಡಿಸಿಕೊಂಡಿರುವುದು
- ಹಳಗನ್ನಡ ಚಂಪೂ ಕಾವ್ಯದ ಓದು, ವ್ಯಾಖ್ಯಾನಗಳ ಅರಿವು ಮೂಡಿಸಿಕೊಂಡಿರುವುದು
- ಕನ್ನಡ ವ್ಯಾಕರಣ ಪರಿಚಯ ಮಾಡಿಕೊಂಡಿರುವುದು ಹಾಗೂ ಅದನ್ನು ಇಂದಿನ ಸಂವಹನದಲ್ಲಿ ಅಳವಡಿಸಿಕೊಳ್ಳಬಲ್ಲ ಕೌಶಲ ಪಡೆದುಕೊಂಡಿರುವುದು
- ಕನ್ನಡ ಸಂಶೋಧನೆಯ ಇತಿಹಾಸ, ಸ್ವರೂಪ, ಪ್ರಕಾರಗಳು, ವಿವಿಧ ಹಂತಗಳು ಹಾಗೂ ಸಂಶೋಧನೆ ಬರಹಗಳ ಸ್ಪಷ್ಟವಾದ ಅರಿವನ್ನು ಹೊಂದಿರುವುದು
- ವಿವಿಧ ಸಾಹಿತ್ಯ ಜ್ಞಾನದೊಂದಿಗೆ ಕನ್ನಡದಲ್ಲಿ ಸ್ಪರ್ಧಾತ್ಮಕ ಪರೀಕ್ಷೆಗಳನ್ನು ಎದುರಿಸಬಲ್ಲ ಶಿಸ್ತನ್ನು ಮೈಗೂಡಿಸಿಕೊಂಡಿರುವುದು

Department Name:

HINDI

PROGRAMME OUTCOMES

PO1: To enhance their knowledge in Hindi language, grammar & prose were prescribed in the syllabus, to develop basic language skills in reading and writing among students.

PO2: To make the syllabus more job oriented and to promote multi-lingual and inter-disciplinary study, Translation has been included in the syllabus.

PO3: Functional Hindi has been introduced to make the syllabus more relevant for industry, bank and other public/private sectors.

PO4: To develop a range of artistic skills among the students drama has been added into the syllabus.

PO5: To develop spirituality, moral & social values, Modern poetry has been introduced.

PO6: To develop effective communication skills, peer teaching-learning, Seminars, projects, assignments, and industry visit has been made as a part of the regular curriculum.

PO7: Knowledge of literary isms and Indian culture.

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Students will improve their reading and interpreting skills by introducing them to texts on specific social, economic, cultural, political issues. Such texts through their contemporaneity will contextualize language and help students to think critically and articulate their thoughts in classroom discussions.

PSO2: They will learn to communicate with teachers, their peers and other with speakers in public domain using Hindi language. They will be able to read and comprehend reference materials related to core subjects of their discipline. They should be able to read Hindi language newspapers and also understand Hindi language content available on television and also social media platforms

PSO3: Students should also be able to distinguish between formal, colloquial, journalistic, poetic, scientific forms and registers of language.

Course Outcomes:

CO1: Multicultural and multi lingual approach.

CO2: Students undergoing the program will improve their basic Hindi language skills like reading, listening, comprehending, speaking, debating and writing

CO3: Learners will gain confidence to use an national language and become competent global citizens in an age of globalization

CO4: reading competence through engagement with challenging texts of selected prose,poetry and short stories

CO5: logical thinking, analytical skills and critical thinking abilities through such engagement

CO6: Conversation skills through Dialogue Writing

CO7: Logical thinking through completing a story by following guiding hints

CO8: Metaphorical use of language through Idioms and Phrases

CO9: Using appropriate Articles and Prepositions

CO10: Vocabulary building / semantics / etymology

CO11 : Skills of paraphrasing by practice of Precise Writing

CO12 : Appropriate use of collocations, Phrasal verbs and Tense forms

Department Name:

SANSKRITH

PROGRAMME OUTCOMES

PO1:Attain greater understanding of different areas of Sanskrit Language, Literature and Shastras.

PO2: Acquire high proficiency and knowledge in a particular subfield of Sanskrit Studies.

PO3:Understand the traditional and contemporary ways for dealing with Sanskrit Literature, Language and Shastras .

CO4:Understand and articulate issues pertaining to origin and evolution of Sanskrit Language ,Literature.

CO5:Understand the advanced and the scientific Structure of Sanskrit Grammar.

CO6:Impart the knowledge of Sanskrit Literature as based on Values of Ethics and Morality capable of providing right grooming.

CO7:Impart knowledge of comparative linguistic methodology.

CO8:Acquire Sanskrit language skills to read, write, speak and translate .

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Students will improve their reading and interpreting skills by introducing them to texts on specific social, economic, cultural, political issues. Such texts through their contemporaneity will contextualize language and help students to think critically and articulate their thoughts in classroom discussions.

PSO2: They will learn to communicate with teachers, their peers and other with speakers in public domain using Hindi language. They will be able to read and comprehend reference materials related to core subjects of their discipline. They should be able to read Hindi language newspapers and also understand Hindi language content available on television and also social media platforms

PSO3: Students should also be able to distinguish between formal, colloquial, journalistic, poetic, scientific forms and registers of language.

Course Outcomes:

CO1: Logical thinking through completing a story by following guiding hints

CO2: Metaphorical use of language through Idioms and Phrases

CO3: Using appropriate Articles and Prepositions

CO4: Vocabulary building / semantics / etymology

CO5: Skills of paraphrasing by practice of Precise Writing

CO6: Appropriate use of collocations, Phrasal verbs and Tense forms

Department Name:

MALAYALAM

PROGRAMME OUTCOMES

PO1: To ground all students in the four basic language skills of speaking, listening, reading and writing

PO2: To hone their powers of comprehension, analysis and expression in Malayalam language

PO3: To draw out creativity and originality

PO4: To develop skills in public speaking, leadership and the histrionic arts

PO5: To shape their reading habits and make them well-informed young people

PO6: To fit them out for careers at the local, national and global levels in the academics, the media, the corporate world and the administrative services

PROGRAMME SPECIFIC OUTCOMES

PSO1: Students undergoing the course will improve their basic Malayalam skills like reading, listening, comprehending, speaking, debating and writing

PSO2: Multicultural and multi lingual approach will be strengthened

PSO3: Students will improve their reading and interpreting skills by introducing them to texts on specific social, economic, cultural, political issues. Such texts through their contemporaneity will contextualize language and help students to think critically and articulate their thoughts in classroom discussions.

PSO4: Learners will learn to communicate with teachers, their peers and others, and will

<p>be able to present themselves as orators in public domain using Malayalam.</p> <p>PSO5 : Students will also be able to distinguish between formal, colloquial, journalistic, poetic, scientific forms of language..</p>
<p>Course Outcomes:</p> <p>CO1: Information can be obtained from the initial level of Malayalam language to the present changing forms</p> <p>CO2: Along with the theoretical form of the language, the practical form can also be known.</p> <p>CO3: Enhance the knowledge towards linguistics.</p> <p>CO4: Sentimental understanding, ethics, social harmony, environmental topics through Indian literature.</p> <p>CO5: Will be capable of serious, critical and independent reflection.</p> <p>CO6: Information can be obtained from the initial level of Malayalam language to the present changing forms</p> <p>CO7: Along with the theoretical form of the language, the practical form can also be known.</p> <p>CO8: Enhance the knowledge towards linguistics.</p> <p>CO9: Sentimental understanding, ethics, social harmony, environmental topics through Indian literature.</p> <p>CO10: Will be capable of serious, critical and independent reflection.</p>

Department Name:	KONKANI
PROGRAMME OUTCOMES	
<p>PO1: The Konkani dept strives to fulfill the following objectives keeping in mind the vision and mission of the college.</p> <p>PO2: Value based stories help developing moral and ethical dimension.</p> <p>PO3: Essays help the students to widen their view to creative writing.</p>	
PROGRAMME SPECIFIC OUTCOMES	
<p>PSO 1Students undergoing the course will improve their basic Konkani skills like reading, listening, comprehending, speaking, debating and writing</p>	

PSO2: Multicultural and multi lingual approach will be strengthened

PSO3: Learners will learn to communicate with teachers, their peers and others, and will be able to present themselves as orators in public domain using konkani.