Mahajana Education Society®

Education to Excel

SBRR Mahajana Frist Grade College (Autonomous)

Jayalakshmipuram, Mysuru – 570012

Affiliated to the University of Mysore

Re-Accredited by NACC eith 'A' Grade, College with Potential Excellence

Program Education Objectives

PEO - 1: Develop focus and depth in one or more disciples with emphasis on acquiring skills necessary to excel in an academic and research- oriented career.

PEO – 2: Build competency for an effective two – way communication, develop interpersonal relationships

PEO – 3: Inculcate morals and values to shape their personality as principled individuals exhibiting family values, demonstrating social responsibility and appreciating cultural diversity.

PEO - 4: Encourage participation in community-based activities to raise awareness on social issues and mould them as transformers of society to encourage social justice.

PEO – 5: Endeavour towards the success of Democracy and development of national consciousness.

BIOCHEMISTRY

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 232569

Course Title:	**DSC (5) Theory**	**DSC(5) Lab**
	Biochemistry of Biomolecules and Nutrition	Qualitative analysis of Biomolecules and their nutritional aspects

COURSE OUTCOMES (COs):

- **CO1:** Develop the ability to classify, depict the structure and describe the chemical properties and functions of carbohydrates. Get acquainted with the basics of nutrition of carbohydrates.
- **CO2:** Ability to classify amino acids and proteins based on various categories. Depict the structure of amino acids and describe the chemical properties of amino acids, peptides, proteins and sequencing methods of amino acids. Gain the knowledge of nutritional aspects of proteins.
- **CO3:** Explicate the different types of lipids and their biological role. Acquire the knowledge on composition, types and chemical properties of nucleic acids.
- **CO4:** Interpret and apply the basic concepts of nutrition and describe the physiological functions of various macro and micronutrients. Acquire the knowledge on nutritional disorders, adulterants and their implications.

Course Code: 232570
Course Title: DSC(6): Human Physiological and Enzymology
COURSE OUTCOMES (COs):

- **CO1**: Get acquainted with the anatomy, structure and physiological functions of nervous system, respiratory system, circulatory system, muscle tissue and their mechanisms.
- **CO2:** Ability to describe the structure and physiological functions of bone, cartilage, excretory and hepatic system. Elucidate the role of digestive enzymes functions of various endocrine hormones, their mechanism and regulation in the body.
- **CO3:** Illustrate the general characteristics, nature of different types of enzymes and their mechanism of action. Develop competence in isolating various enzymes and calculate its activity and specific activity.
- **CO4:** Analyze the various parameters of enzyme kinetics, factors effecting its activity and get acquainted with the concept of enzyme inhibition. Develop skills to calculate the kinetic parameters of enzyme and represent it graphically.

Course Code: 232669
Course Title: DSC (7) Metabolism with Clinical Correlations
COURSE OUTCOMES (COs):

- **CO1:** Get acquainted with the principle of thermodynamics. Depict the structure of mitochondria and comprehend the role of ETC complexes in respiratory chain. Able to describe chemiosmosis hypothesis of ATP synthesis.
- **CO2:** Acquire the knowledge on compartmentalization of metabolic pathways. Elucidate various metabolic pathways of carbohydrate and harvest its energetics and regulatory steps. Interpret the disorders associated with errors in carbohydrate metabolism.
- **CO3:** Schemate biosynthetic and oxidation pathways of lipid metabolism and calculate its energetics. Describe the action of nucleases and elucidate the catabolic and anabolic

pathways of nucleic acids. Interpret the disorders associated with errors in lipids and nucleic acid metabolism metabolism.

- **CO4:** Comprehend the general reactions of aminoacids and their significances. Schemate urea cycle, catabolic and anabolic pathways of aminoacids. Illustrate the inherited disorders associated with the error in the amino acid metabolism.

Course Code: 232670
Course Title: DSC (8) Molecular Biology and Immunology
COURSE OUTCOMES (COs):

- **CO1:** Able to justify the nucleic acids as genetic carriers and describe the central dogma of molecular biology. Explicate the mechanism of DNA replication, different types of mutations and illustrate the mutagenic effect of various mutagens.
- **CO2:** Illustrate the mechanisms spanning from transcription to translation. Apply the knowledge in analyzing problems at their molecular level. Employ the molecular biology techniques to analyze the changes at gene level for the development of new therapies for problem solving.
- **CO3:** Acquire the knowledge on scope and various techniques of genetic engineering & apply the principle of various blotting techniques in separation of nucleic acids. Employ the techniques of genetic engineering in the production level benefiting various fields.
- **CO4:** Develops ability to describe the types of immunity with examples, characteristics, types of antigens and antibodies. Illustrate the role of immunologically important organs and cells, acquire knowledge on concept of immunization and preparation of vaccines and develop competence in handling various immunological techniques. Gain ability to describe various immunological disorders.

Course Code: 23INTBIC01
Course Title: Internship
COURSE OUTCOMES (COs):

- **CO1:**Integrate Theory and Practice of the area selected for Internship to explore the Career Opportunities prior to Graduation
- **CO2:**Develop Communication, Interpersonal, Work Habits, Attitude, technical and other Critical Skills required for a job.

BIOTECHNOLOGY

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

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PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

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PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 232559 **Course Title**:
Genetic Engineering (Theory)
Genetic Engineering Lab (Practical)

Course Outcomes (COs):

CO1: Interpret and apply the basic concepts of nucleic acid isolation, quantification and gene expression analysis. Acquire the information about the process of cloning and different types of cloning vectors.

CO2: Analyzethebasicprinciplesofgenomeeditingandmanipulationtechniques of both prokaryotic and eukaryotic organisms. Get acquainted with the basic techniques of Genetic engineering.

CO3: Describesthebasicprinciplesandapplicationsofgeneticengineeringinvariousfield.

CO 4: Interpret the concepts of industrial scale up and advances in genetic engineering. Debate on ethical implications associated with genetic engineering.

Course Code: 232560

Course Title: Plant and Animal Biotechnology (Theory)
Plant and Animal Biotechnology (Practical)

Course Outcomes (COs):

CO1: Exposure to the plant tissue culture skills and applications in Plant Biotechnology and research.

CO 2: Acquire information about the concepts of cloning and trans genesis of both plants and animals with respect to the advancement in medical, agricultural and pharmaceutical industry.

CO3: Develop the ability about animal cell potency, mass production of cell lines and basic characterization of mammalian cell culture.

CO4: Elucidate and specify different types of gene transfer techniques, gene editing and basic concept about ethical issues.

Course Code: 23EMPBIT01

Course Title: Biotechnology and Analytical techniques (Theory)
Quality control methods in biology (Practical)

Course Outcomes (COs):

CO 1: To introduce the concept of executive industrial skills and Digital skills.

CO2: Familiarize the working principle of several bio analytical techniques like microscopy, centrifugation, spectroscopy and electro phoretic and other technique.

Course Code: 232659

Course Title: Immunology (Theory)
Immunology (Practical)

Course Outcomes (COs):

CO1: Over view of various aspects about cells and organs of immune system.

CO 2: Strengthen the concept of antigen-antibody interaction, MHC, Hypersensitivity and complementation pathways**.**

CO3: Technical skills with respect to immunology and vaccine development.

CO 4: Application and interpretation of immunological techniques for treating autoimmune diseases, immune deficiencies and cancer immunotherapy.

Course Code: 232660
Course Title: Bioprocess and Environmental Biotechnology (Theory)
Bioprocess and Environmental Biotechnology (Practical)
Course Outcomes (COs):
CO1: The skills of exploitation of microorganisms for bioprocess technology, principle of upstream processing and concept of fermentation techniques.
CO2: The basic concept introduces significance of bioreactors, certain analytical techniques in downstream processing and its biological applications.
CO3: The concept introduces evaluations of environmental biotechnology in regards with major issues in environmental pollution, detection and abandonment.
CO4: Illustration and importance of bioremediation and various biological approach for waste water management.

Course Code: 23INTBIT01
Course Title: Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.
CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

BUSINESS ADMINISTRATION

Programme outcomes for Business Administration

PO1 - Domain knowledge: Acquire knowledge of management theories and practices with special focus on professional accounting and finance.

PO2 - Problem analysis: Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.

PO3 - Design/development of solutions: Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.

PO4 - Investigation and research: Implementation of research methods to investigate specific business problems and draw conclusions.

PO5 - Use of modern techniques/tools: Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.

PO6 - Business and Society: Entrepreneurs/Managers with socio-economic value system.

PO7 - Environment and Sustainability: Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.

PO8 - Moral and Ethical values: Assimilate ethical, value based leadership skills and moral principles.

PO9 - Individual and Team work: Ability to perform as an individual or leader in diverse settings.

PO10 - Communication and leadership skills: Harness communication and leadership skills effectively to adapt to the growing business world.

PO11 - Project management and Finance: Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.

PO12 - Lifelong Learning: Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

Course Code: 234529
Course Title: Production and Operations Management
Course Outcomes: On successful completion of the course, the students' will be able to

a) Gain knowledge on theevergrowingimportanceofProductionandOperationsManagementinuncertainbusinessenvironment.
b) Illustrate the different aspects of Plant Location and Layout.
c) Analyze the process of Production Planning and Control.
d) Comprehend the unique challenges faced by firms in Inventory Management.
e) Develop skills to operate competitively in the current business scenario.

Course Code: 234530
Course Title: Income Tax– I
Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the computation of Total Income and tax liability of anindividual.
b) Evaluate the provisions for determining the residential status of an Individual.
c) Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.
d) Compute the income house property for different categories of house property.
e) Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Course Code: 234531
Course Title: Banking Law and Practice
Course Outcomes: On successful completion of the course, the students will be able to:

a) Understand the legal aspects of banker and customer relationship.
b) Open the different types of accounts.
c) Describe the various operations of banks.
d) Understand the different types of crossing of cheques and endorsement.
e) Understanding of different types of E-payments.

Course Code: 234532
Course Title: Advanced Corporate Financial Management
Course Outcomes: On successful completion of the course, the students will be able to:

a) Illustrate and determine the overall cost of capital and evaluate capital structure.
b) Comprehend the different advanced capital budgeting techniques.
c) Analyze the importance of dividend decisions and dividend theories.
d) Evaluate mergers and acquisition.
e) Acquire knowledge on ethical and governance issues in financial management.

Course Code: 234533
Course Title: Consumer Behaviour
Course Outcomes: On successful completion of the course, the students will be able to:

a) Understanding of Consumer Behaviour towards products, brands and services.
b) Distinguishbetweendifferentconsumerbehaviourinfluencesandtheirrelationships.
c) Establishtherelevanceofconsumerbehaviourtheoriesandconceptstomarketing

decisions.

d) Implement appropriate combinations of theories and concepts.

e) Recognise social and ethical implications of marketing actions on consumer behaviour.

Course Code: 234534

Course Title: Compensation and Performance Management

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

a) Understand the concepts of Compensation management.

b) Describe job evaluation and its methods.

c) Evaluate the different methods of wages.

d) Describe performance management and methods of performance management.

e) Acquire the knowledge on the Preparation of Payroll.

Course Code: 234535

Course Title: Fundamentals of Retail Management

Course Outcomes: On successful completion student will demonstrate:

a) Acquire knowledge about Retail Business.

b) Evaluate the business operations in Retailing.

c) Formulate the retail strategies of Retail Business.

d) Apply the Retailing principles and theories.

e) Explore the career opportunities in the Retail sector.

Course Code: 234536

Course Title: Information Technology For Business

Course Outcomes: On successful completion Student will demonstrate;

a) Acquire the knowledge about the fundamentals of information technology.

b) Apply the usage of information technology in business.

c) Learn core concepts of computing and modern systems.

d) Applications of Excel and SQL.

e) Awareness about latest information.

Course Code: 234537

Course Title: **Digital Marketing**

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

a) Acquire knowledge on Digital Marketing and strategies.

b) Comprehend the concepts of Email marketing and Content marketing.

c) Awareness about Social Media Marketing and Web Analytics.

d) Learn YouTube Advertising &Conversions.

Course Code: 23EMPBBA01

Course Title: Employability Skills

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

a) Acquire information on various vacancies notified by Central and State Government authorities as well as Private organizations.

b) Evaluate the problems on quantitative aptitude, logical reasoning and analytical ability.

c) Application of basic computer skills like MS Word, MS Excel, MSPPTs. Email etiquettes Etc.,

d) Articulate communication and leadership skills.
e) Evaluate self SWOC analysis and set his career goals.

Course Code: 234629
Course Title: Business Law
Course Outcomes: On successful completion of the course, the students will be able to;

a. Comprehend the laws relating to Contracts and its application in business activities.
b. Learn the rules for Sale of Goods and rights and duties of a buyer and a Seller.
c. Acquire knowledge about the importance of Negotiable Instrument Act and its provisions relating to Cheque and other Negotiable Instruments.
d. Infer the significance of Consumer Protection Act and its features.
e. Understand the need for Environment Protection.

Course Code: 234630
Course Title: Income Tax –II
Course Outcomes: On successful completion of the course, the students will:

a) Gain knowledge about the procedure for computation of income from business and other Profession.
b) Evaluate the provisions for determining the capital gains.
c) Compute the income from other sources.
d) Demonstrate the computation of total income of an Individual.
e) Comprehend the assessment procedure and to know the power of income tax authorities.

Course Code: 234631
Course Title: International Business
Course Outcomes: On successful completion of the course, the students will able to:

a) Acquire knowledge about the concepts of International Business.
b) Compare the Internal and External International Business Environment.
c) Evaluate the difference MNC and TNC
d) Understand the role of International Organisations in International Business.
e) Learn International Operations Management.

Course Code: 234632
Course Title: Security Analysis and Portfolio Management
Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the basic concepts of Investment.
b) Illustrate the relationship between risk and return and evaluate the different investment alternatives.
c) Analyze and evaluate the fundamental investment analysis.
d) Comprehend the basics of Technical analysis.
e) Evaluate portfolio and portfolio management

Course Code: 234633
Course Title: Advertising and Media Management
Course Outcomes: On successful completion of the course, the students will be able to:

a) Gain knowledge on the nature, role and importance of IMC in marketing strategy.

b) Evaluate the effective design and implementation of advertising strategies.
c) Present a general understanding of content, structure and appeal of advertisements.
d) Analyze ethical challenges related to responsible management of advertising a brand strategy.
e) Evaluate the effectiveness of advertising and agencies role.

Course Code: 234634

Course Title: Human Resources Development

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

a) Acquire knowledge about HRD.
b) Comprehend the framework of HRD.
c) Assess the models for evaluating the HRD programs.
d) Evaluate the need for employee counseling.
e) Apprehend the HR performance.

Course Code: 234635

Course Title: Retail Operations Management

Course Outcomes: On successful completion student will demonstrate:

a) Compare various retail formats and technological advancements for setting up appropriate retail business.
b) Identify the competitive strategies for retail business decisions.
c) Examine the site location and operational efficiency for marketing decisions.
d) Analyse the effectiveness of merchandising and pricing strategies.
e) Assess to relay out and planogram for retail business.

Course Code: 234636

Course Title-Goods And Services Tax

Course Outcomes: On successful completion Student will demonstrate

a) Gain knowledge on the basics of taxation, including the meaning and types of taxes and the differences between direct and indirect taxation.
b) Analyze the history of indirect taxation in India and the structure of the Indian taxation system.
c) Illustrate the framework and definitions of GST, including the constitutional framework, CGST, SGST, IGST and exemptions from GST.
d) Evaluate the time, place and value of supply under GST and apply this knowledge to calculate the value of supply and determine GST liability.
e) Comprehend input tax credit under GST, including its meaning and process for availing it and apply this knowledge to calculate net GST liability.

Course Code: 234637

Course Title Enterprise Resource Planning

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

a) Evaluate the business process of an enterprise to grasp the activities of ERP project management cycle to understand the emerging trends in ERP developments.
b) Integrate and automate the business processes and shares in formation enterprise-wide.
c) Explore the significance of ERP to provide a solution for better project management.
d) Enable the students to understand the various process involved in implementing ERP in a variety of business environment.
e) Evaluate the issues involved in design and implementation of ERP systems.

COMMERCE

Programme outcomes for Business Administration

PO1 - Domain Knowledge- Inculcation of fundamental concepts, principles and application of the same.

PO2 - Problem Analysis- Identifying and analyzing the problems in the field of business.

PO3 - Design & Development of Solutions- Adapting INDAS, Companies act, designing the costing techniques and methods, marketing strategies, business and tax planning along with its approaches.

PO4 - Research and Investigation- Research methodology with SPSS, probabilities and testing of hypothesis.

PO5 - Modern Techniques & Tools- Technology based education towards revolutionizing the skills.

PO6 - Domain & Society- Inculcating positive impact on the society and making accountable by imparting the significance and its applicability.

PO7 - Environment & Sustainability- Capable of handling the uncertainties to sustain the current challenges.

PO8 - Moral & Ethical Values- Inculcate ethical values in aiming towards Corporate social responsibility.

PO9 - Individual & Teamwork- Assimilate the quality of personnel through adoption of scientific management studies and curtail any flaws without conflicts.

PO10 - Communication- Stream light the thoughts to reach the goals by creating tactical outreach plans.

PO11 - Project Management & Finance- Create opportunities through well planned diversified projects.

PO12 - Life Long Learning- Develop inquisitiveness in continuous and self-motivated approach towards grooming the global leaders.

Course Code: 233516
Course Title: Financial Management
Course Outcomes:
CO1- Know the role of financial managers effectively in an organization.
CO2- Knowledge of knowing the techniques for time and value of money.
CO3- Imparting the skills of financial decisions.
CO4 - Gain the knowledge of investment and expenses.

Course Code: 233517
Course Title: Income Tax Law and Practice-I
Course Outcomes:
CO1- Knowledge of the concepts of income tax.
CO2-Provisionsf or determining the residential status of an Individual.
CO3- Gain the knowledge of individual and house income.
CO4- Knowledge of capital gains.

Course Code: 233518
Course Title: Principles and Practice of Auditing
Course Outcomes:
CO1- Analyze the frame work 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- Knowledge of auditing and reporting in the companies.

Course Code: 23DSECOM01
Course Title: Indian Accounting Standards-1
Course Outcomes:
CO1- Gain the knowledge of the accounting standards.
CO2-Preparation of the financial statements as Indian Accounting standards.
CO3-Comprehend the requirements of Indian Accounting Standards.
CO4-Understandthe Accounting Standards for Items that do not Appear in Financial Statements.

Course Code: 23DSECOM02
Course Title: Financial Institutions and Markets
Course Outcomes:
CO1- Gain the knowledge of 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- knowledge of the role played by Banking and NBFC's.

Course Code: 23DSECOM04
Course Title: Human Resources Development
Course Outcomes:
CO1- Gain the knowledge of HRD.
CO2-Comprehend the frame work of HRD.
CO3- Skill of cognize the human resources.
CO4-Apprehend the HR performance with counseling.

Course Code: 23DSECOM05
Course Title: Basics of Business Analytics
Course Outcomes:
CO1- Understand the analytical applications in practice.
CO2-Validate the sources of data, use of statistical tools and techniques.
CO3-Formulate business models, using quantitative methods including Spread sheets and graphical methods.
CO4-Awareness about the emerging trends in the world of analytics.

Course Code: 23DSECOM03
Course Title: Retail Management
Course Outcomes:
CO1- Knowledge of the contemporary of retail management.
CO2- Know the issues, strategiesin Retailing.
CO3-Perceive the role and responsibilities of store manager and examine the visual Merchandising and its techniques in the present context.
CO4-Comprehend the emerging trends in Retail Industry.

Course Code: 23VOCCOM01
Course Title: GST-Law & Practice (voc)
Course Outcomes:
CO1- Knowledge of the concepts of GST.
CO2-Comprehend the fundamentals of GST.
CO3-Analyze the GST Procedures in the Business.
CO4-Know the GST Assessment and its computation.

Course Code: 233616
Course Title: Advanced Financial Management
Course Outcomes:
CO1- Knowledge of the overall cost of capital.
CO2-Comprehend the different advanced capital budgeting techniques.
CO3-Know the importance of dividend decisions, mergers and acquisition.
CO4-Enable the ethical and governance issues in financial management.

Course Code: 233617
Course Title: Income Tax Law & Practice-II
Course Outcomes:
CO1- Knowledge of computation in income from business and other Profession.
CO2- Procedure of tax deduction and advance tax ruling.
CO3-Compute the income from other sources.
CO4-To acquire the knowledge of assessment procedure and to know the power of Income tax authorities.

Course Code: 233618
Course Title: Management Accounting
Course Outcomes:
CO1- Knowledge of the significance of management accounting.
CO2-Analyze and interpret the corporate financial statements by using various techniques.
CO3-Compare the financial performance of corporate through ratio analysis and cash flow.
CO4-Acquaint the knowledge of marginal costing.

Course Code: 23DSECOM06
Course Title: Indian Accounting Standards-2
Course Outcomes
CO1- Knowledge of preparing the consolidated financial statements as per INDAS.
CO2-Learn the disclosures in the financial statements.
CO3- Know how about accounting policies.
CO4-Analyze the Revenue based accounting standard.

Course Code: 23DSECOM07
Course Title: Investment Management
Course Outcomes:
CO1- Knowledge of investments and its instruments.
CO2 – Comprehend the functioning of secondary market in India.
CO3- Gain the concept of risk and return and their relevance in purchasing and selling of securities.
CO4 – Analyze the company's technical analysis for trading in the share market.

Course Code: 23DSECOM09
Course Title: Cultural Diversity at Work Place
Course Outcomes:
CO1- Knowledge of the notion of diversity.
CO2- Recall the cultural diversity at work place in an organization.
CO3- Explore the differences in Culture.
CO4-Assessthe contemporary organizational strategies for managing workforce diversity.

Course Code: 23DSECOM10
Course Title: Human Resource Analytics
Course Outcomes:
CO1- Knowledge of Analytics in Human Resource.
CO2-Identify a list of HR metrics relevant to an organization's mission or goals.
CO3-Applying the usage of HR analytics to support making data-driven decisions.
CO4- Application of analytical techniques to interpret HR data.

Course Code: 23DSECOM08
Course Title: Customer Relationship Management
Course Outcomes:
CO1- Awareness of the nuances of customer relationship.
CO2-Analysis of the CRM link with the other aspects of marketing.

CO3- Knowledge of the Role of CR Mini increasing the sales of the company.
CO4-Imparting the knowledge of marketing strategies and implementations.

Course Code: 23VOCCOM02
Course Title: Assessment of Non –Individuals and Filing of ITRs

Course Outcomes:
CO1- Knowledge to calculate the Depreciation and allowance.
CO2-Comprehend the assessment of corporate entities and determine the taxliability.
CO3- Assessing the companies with their financial aspect.
CO4-Acquaint with the rules and regulations of INDAS.

Course Code: 23INTCOM01
Course Title: INTERNSHIP

COMPUTER SCIENCE

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PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

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Course Code: 232549
Course Title: DSC(5) - Programming in Python (Theory)
DSC(5) Lab - Python Programming Lab (Practical)
Course Outcomes (COs):
CO1: Procure Knowledge on Basic Python Programming Concepts and Control Flow.
CO2: Design Solutions for Real-time Applications using the concept of Basic & Advanced Data Types in Python.
CO3: Develop Efficient Python Applications using Functions, OOP Concepts, File & Exception Handling.
CO4: Apply Knowledge Gained on Various Python Libraries for GUI, Data Analysis and Data Visualization.

Course Code: 232550
Course Title: DSC(6) - Computer Networks (Theory)
DSC(6) Lab - Computer Networks Lab (Practical)
Course Outcomes (COs):
CO1: Build an Understanding of the Fundamental Concepts of Computer Networking, Identify various Network Topologies and Enumerate the Layers of the OSI Reference Model and TCP/IP.
CO2: Familiarize with the use of Physical Layer of a Network Model and Transmission Media & related Terminologies.
CO3: Apply Knowledge Gained on Framing, Error Detection & Correction Techniques, Channelization, Access Mechanism, Data Link Control & Protocol and Wired & Wireless LAN.
CO4: Identify & Interpret the functions of a Transport & Application Layer & Protocols.

Course Code: 23CYST94
Course Title: SEC(3) – Cyber Security
Course Outcomes (COs):
CO1: Gain Knowledge on Basics of Cyber Security and its Challenges.
CO2: Comprehend the Knowledge gained on Cyber Crimes & Cyber Laws in India.
CO3: Analyze and apply knowledge gained on Cyber Security & Laws on Social Media Platforms.

Course Code: 23EMPCMS01
Course Title: SEC(3) – Employability Skills
Course Outcomes (COs):
CO1: Acquire & Interpret Communication and Behavioral Skills required for Employability.
CO2: Procure Critical Skills and IT Literacy required to increase Productivity & Efficiency at Workplace.
CO3: Accomplish Skills required to become an Entrepreneur, get Insight on Occupational Health, Safety, Law & Environmental Education.

Course Code: 232649
Course Title: DSC(7) - Web Technologies (Theory)
DSC(7) Lab-Web Technologies Lab (JavaScript, HTML, CSS Lab) (Practical)
Course Outcomes (COs):
CO1: Acquire knowledge on Internet, WWW & Web Design.
CO2: Design & Develop Applications using HTML, CSS & JavaScript.
CO3: Implement Servlets & Database Connectivity in Web Application Development.
CO4: Optimize Web Application Development with the Knowledge Gained on Web Security.

Course Code: 232650
Course Title: DSC(8) - Statistical Computing & R Programming (Theory)
DSC(8) Lab - R Programming Lab(Practical)
Course Outcomes (COs):
CO 1: Design and Develop R Programs using R Constructs.
CO2: Acquire Knowledge on Basics of Statistics, Common Probability Distributions and Data Visualization.
CO 3: Conduct and Interpret Hypothesis Tests on various Data Sets to Aid Decision Making.
CO 4: Implement Simple & Multiple Linear Regression on Data for Procuring Predictive Data and Exert Advanced Graphics on Charts.

Course Code: 23LORCMS01
Course Title: SEC(4) - Logical Reasoning
Course Outcomes (COs):
CO1: Analyze and Design better Solutions for Day-to-Day Situations/Challenges.
CO2: Develop and Interpret Data in an efficient way while Solving Problems.
CO3: Apply Critical Thinking to Real-time Situations for better Problem Solutions.
Course Code: 23INTCMS01
Course Title: SEC(4) – Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.
CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.
Internship to be assessed for 100 Marks, C1 to be conducted for 50 Marks & C2 to be conducted for 50 Marks. There will be no C3 for Internship.

COMPUTER APPLICATION (BCA)

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 235529

Course Title: DSC (13) Design and Analysis of Algorithm
DSC (13) - Lab Design and Analysis of Algorithm laboratory

Course Outcomes(COs):

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: Analyze the brute force approach and Decrease and conquer.

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 Technique and Apply various algorithm design to real-world problems and evaluate their effectiveness.

Course Code: 235530

Course Title: DSC (14) Statistical Computing &R Programming R Programming Lab

Course Outcomes:

CO1: Explore fundamentals of statistical analysis in the R environment and understand key terminologies, concepts and techniques employed in Statistical Analysis.

CO2: Define Calculate Implement Probability and Probability Distributions to solve a wide variety of problems.

CO3: Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.

CO4: Understand, Analyze, and Interpret Correlation Probability and Regression to analyses the under lying relationships between different variables.

Course Code: 235531

Course Title: DSC(15) Software Engineering

Course Outcomes:

CO1: Assess professional and ethical responsibility. Use the techniques, skills and modern engineering tools necessary for software engineering practice.

CO2: Design a software system, component or process to meet the desired needs within realistic constraints.

CO3: Differentiate system models. Use UML diagrams and apply design patterns.

CO4: Illustrate different testing techniques.

Course Code:23DSEBCA01

Course Title: DSE (1)Cloud Computing

Course Outcomes (COs):

CO1: Acquiring knowledge on cloud computing basics, different computing paradigms, applications of cloud in Scientific, Geo Science, Business and Customer applications.

CO2: Analyzing the cloud architecture with different Cloud Service Models and Visualization concept.

CO3: Implementing the cloud application programming, Aneka platform and other management tools in industry such as Amazon Web Service, Google App Engine and Microsoft Azure.

Course Code: 23DSEBCA02
Course Title: DSE (2) Business Intelligence
Course Outcomes:
CO1: Describe the Decision Support systems and Business Intelligence framework.
CO2: Explore knowledge management, explain its activities, approaches and its implementation.
CO3: Describe business intelligence, analytics, and decision support systems.

Course Code: 23VOCBCA01
Course Title: VOC (1) Digital Marketing
Course Outcomes:
CO1: Acquiring knowledge on fundamental concepts of digital marketing and it's importance, developing strategies, objectives and campaign planning.
CO2: Analyzing social media marketing, advertising, email marketing, content marketing and applying strategies and techniques within each of these digital marketing channels.
CO3: Analyzing mobile marketing and implementing various analytical tools, reporting and data visualization.

Course Code: 235629
Course Title: DSC(16) Artificial Intelligence and Application
Course Outcomes:
CO1: Understand the historical perspective of AI and its foundations**.**
CO2: Implement the basic principles and strategies of AI towards problem solving.
CO3: Apply approaches of knowledge representation.
CO4: Differentiate the various forms of learning. Illustrate the different applications of AI.

Course Code: 235630
Course Title: DSC (17) PHP & MYSQL PHP & MYSQL LAB
Course Outcomes (COs):
CO1: Illustrate the basic Concepts of PHP.
CO2: Understanding the Function and applying Object oriented programming techniques.
CO3: Organizing PHP concepts in creating the HTML forms.
CO4: Programming a Database using PHP with MySQL.

Course Code: 23DSEBCA03
Course Title: DSE (3) Fundamentals of Data Science
Course Outcomes:
CO1: Understand the Concepts of Data
CO2: Understanding data pre-processing and mining frequent patterns.
CO3: Analyzing the classification and clustering methods.

Course Code: 23DSEBCA04
Course Title: DSE (4) Mobile Application Development
Course Outcomes:
CO1: Acquiring knowledge on android development and android studio. Create, test and debug android application by setting up android development environment.
CO2: Analyzing android application design essentials, android user interface design essential sand techniques for designing and developing sophisticated mobile interfaces.
CO3: Analysis of mobile application for the android operating system and deploy application to the android market place for distribution.

Course Code: 23VOCBCA02
Course Title: VOC(2) Web Content Management System
Course Outcomes:

CO1: Understanding the content of development basics, Acquiring knowledge on tools for multimedia content development for audio/ video, graphics , animations, presentations, screen casting, editing, and web hosting.
CO2: Analyzing the Host websites and develop content for social media platforms such as wiki and managing a blog site. Analyzing the knowledge on Presentation Software, screen casting tools and techniques.
CO3: Understanding e-publications and virtual reality applications, 2D and 3D Animations Implementations of e-learning platform Moodle and CMS applications Drupal and Joomla.

Course Code: 23INTBCA01
Course Title: Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.
CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

CRIMINOLOGY & FORENSIC SCIENCE

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231572
Course Title: **DSC (5)**Medical Jurisprudence and Toxicology
DSC (5) Lab-Medico-legal Examination
Course Outcomes(CO's):
CO1.Analyse the basics of Medical Jurisprudence and Toxicology
CO2. Demonstrate the medico-legal importance of Death.
CO3. Determine the effect of toxins on human body.
CO4. Familiarize oneself with autopsy and its significance.

Course Code: 231573
Course Title: **DSC (6)** Juvenile Justice
Course outcomes (CO's):
CO1: Analyze the definition of juvenile delinquency and its brief history.
CO2: Explain the current situation of JD in India in comparison to developed countries.
CO3: Recognize the various deviancy theories.
CO4: Develop the knowledge regarding the relevant laws, institutions dealing with juvenileeviants

Course Code:231573
Course Title: **DSC (6)** FIELD WORK/ PROJECT/ DISSERTATION/ INTERNSHIP (Practical)
Course Code: 231672
Course Title: **DSC (7)** Forensic Dactyloscopy and DNA Finger printing (Theory)
DSC (7) Examination of Fingerprints & Footprints (Practical)
Course Outcomes (COs):
CO1:Recognizing the significance of DNA and the forensic dactyloscopyidea.
CO2: Educating oneself on the tenets and laws of individuality.
CO3: Gaining better knowledge on crimes, scams, and the methods used to investigate them in India.
CO4: In order to understand the forensic significance of forensic dactyloscopy and DNA in criminal justice systems.

Course Code:231673
Course Title: **DSC (8)** Corporate Crimes (Theory)
DSC (8) Examination of Frauds and Corporate Crimes (Practical)
Course Outcomes (COs):
CO1: Recognize what corporate crimes are, how they work, and what they do.
CO2: Explain the basic elements and major scope, types of Corporate Crimes.
CO3: Identifying the different corporate crimes that have occurred in India.
CO4: Getting familiar with India's corporate crime laws and prevention strategies.
Course Code: 23INTCRI01
Course Title: **SEC**: INTERNSHIP
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities before Graduation.
CO2: Develop Communication, Interpersonal, Work Habits, Attitude, and other Critical Skills required for a job.

ECONOMICS

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231537
Course Title: DSC (9): Public Economics
Course Outcomes (COs):
CO1: Comprehend the introductory concepts of Public Finance & analyse the causes of market failure and corrective actions.
CO2: Examine the impact, incidence and shifting of tax and Study the Economic Effects of tax on production, distribution and other effects.
CO3: Enable the students to identify the Principles and Effects of Public Expenditure, public debt & Sources of Public Borrowing and Burden of Public Debt.
CO4: Identify the Economic and functional classification of the budget; to acquaint with the advantages and disadvantages of Deficit Financing.

Course Code: 231538
Course Title: DSC (10): Development Economics
Course Outcomes (COs):
CO1: Examine the basic concepts and measurements of Development.
CO2: Acquire the knowledge with some classical and partial theories of Development economics and identify the differences.
CO3: Identify the distinction between Developed and Developing Countries.
CO4: Analyse and tackle the Development issues effectively.

Course Code: 231539
Course Title DSC (11): Indian Banking and Finance
Course Outcomes (COs):
CO1: Identifying the basics 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: Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy. Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.

Course Code: 231540
Course Title DSC (11.1): Economics of Human Resource Management
Course Outcomes (COs):
CO1: Acquire the knowledge about meaning, nature, scope and value of the contemporary approach to human resource management with reference to Economics.
CO2: Evaluation of an organization of a human resource management functionary in an establishment and to identify attributes of a successful personnel manager.
CO3: Imparting knowledge and techniques in human resource planning, Job-Analysis and Job-Design.
CO4: Analysis of the importance and methods adopted for training and development of employees in the work place.

Course Code: (23EMPECO01)
Course Title:(SEC-5)Employability Skills
Course Outcomes: (Cos)
Develop systematic problem-solving abilities.
Enhance verbal and non-verbal reasoning skills.
Improve numerical and analytical abilities.
Enhance English language and communication skills.

Course Code: 231637
Course Title: DSC(12): International Economics
Course Outcomes (COs): After the successful completion of the course, the student will be able to:
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 & Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues.

Course Code: 231638
Course Title: DSC (13): Indian Public Finance
Course Outcomes (COs):
CO1: Identify the structure of Indian Public Finance & trace the Source and nature of public revenue and expenditure.
CO2: Evaluate the Budget and different concept of deficits.
CO3: Gain Knowledge about the Principles of Public Debt and its management.
CO4: Examine the fiscal and monetary policy, their tools and importance including
The Indian federal financing system and Financial Commissions.

Course Code: 231639
Course Title: DSC14: Environmental Economics
Course Outcomes (COs):
CO1: Examine the linkages between Environmental Degradation and Economic Development.
CO2: Develop an informed view regarding the potential of economics to help societies achieve their environmental goals.
CO3: Evaluate the role of Citizens and NGOs in Environmental Protection.
CO4: Analyze environmental problems and to assess environmental policies.

Course Code: 231640
Course Title: DSC14.1: Economic Thoughts of B R Ambedkar
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 present day.
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 & develop the traits of critical thinking.

Course Code: 23INTECO01
Course Title: SEC(2) – Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.
CO2: Sharpen the domain knowledge and provide core competency skills by developing Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

ENGLISH

Program Outcomes (POs) for Bachelor of Arts

PO1 **Domain knowledge:** Acquire knowledge of management theories and practices with special focus on professional accounting and finance.

PO2 **Problem Analysis:** Identify, formulate and analyze complex business problems in a structured approach to focus upon real issues.

PO3 **Design/Development of Solutions:** Developing solutions by using critical thinking and analytical reasoning with appropriate qualitative, quantitative techniques and software applications in solving business and research problems.

PO4 **Investigation and Research:** Implementation of research methods to investigate specific business problems and draw conclusions.

PO5 **Use of Modern Techniques/Tools:** Ability to analyze and interpret data using mathematical, statistical, ICT and risk management techniques to solve business problems.

PO6 **Business and Society**: Entrepreneurs/Managers with socio-economic value system.

PO7 **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and channelize inclination towards sustainable development.

PO8 **Moral and Ethical Values:** Assimilate ethical, value based leadership skills and moral principles.

PO9 **Individual and Team Work:** Ability to perform as an individual or leader in diverse settings.

PO10 **Communication:** Harness communication and leadership skills effectively to adapt to the growing business world.

PO11 **Project Management and Finance:** Design methods and process; apply skills and knowledge to complete projects in accordance with project acceptance criteria and financial considerations.

PO12 **Lifelong Learning:** Evolve and improve as an individual by updating knowledge to enable oneself to thrive in social and professional life.

Course Code: 231579
Title: DSC (9) Literary Criticism
Course Outcomes :

CO1 Define key critical terms and concepts and familiarize themselves with key literary critics and their contributions to the field of criticism.

CO2 Explore major literary movements and paradigms and understand how they shaped literary criticism during different historical contexts

CO3 Analyze different methods and approaches used in literary criticism.

CO4 Reflect on the relevance of literary criticism in the contemporary world, acknowledging its impact on the interpretation and appreciation of literature in different cultural and intellectual contexts.

Course Code: 231580
Title: DSC(10) Subaltern Studies
Course Outcomes:

CO1 A critical insight into subaltern consciousness and engaging critically with issues of subalternity, caste, and historiography in postcolonial contexts.

CO2 Develop the ability to analyze and interpret complex socio-cultural narratives, fostering a deeper understanding of the novel's themes, characters, and their relevance in the context of gender dynamics and societal structures in rural India.

CO3 Appreciate the role of drama as a medium for examining human complexities and identifying various manifestations of patriarchy and its impact on the lives of women.

CO4 Understand the nature of Dalit life and writing and explore the relationship between literature and activism for a change in society.

Course Code: 231581
Title: DSC(11) Life Narratives
Course Outcomes:

CO1 Demonstrate a comprehensive understanding of various forms of life narratives, including autobiographies, biographies memoirs, and diaries.

CO2 Analyze the cultural and societal contexts that shaped Mary Kom's life and career, fostering an understanding of the broader issues of gender, identity, and sports in India.

CO3 Demonstrate advanced skills in textual analysis and interpretation, allowing them to critically engage with the narrative styles, themes, and perspectives presented in these autobiographical works.

CO4 Recognize the value of biographical literature in providing insights into the lives and motivations of influential figures in history.

Course Code: 231679
Title: DSC(12) Postcolonial Studies
Course Outcomes:

CO1 Define key critical terms and concepts relating to Postcolonialism.

CO2 Develop advanced skills in textual analysis and critical thinking, allowing them to engage with complex literary and theoretical texts in the field of postcolonial studies.

CO3 Ability to critically analyze literary and non-literary texts, identifying the underlying themes, symbols, and rhetorical strategies used by the authors to convey their messages.

CO4 Ability to explore the consequences of cultural collision and the struggle for identityin a changing world and appreciation for the values and traditions of an indigenous culture.

Course Code: 231680
Title: DSC(13) Introduction to the History of the English Language
Course Outcomes:

CO1 Identify and explain key milestones in the evolution of the English language, tracing its journey from its earliest forms to the present.

CO2 An in-depth understanding of the growth of the English language under the influence of various other languages including Latin and French.

CO3 Recognize the significance of Bible translators in shaping the English language and assess the contributions of significant writers in defining and promoting standard English.

C04 Appreciate the complexity of the evolution of the English language and analyze how cinema, electronic, digital, and social media have influenced the contemporary English language, exploring the impact of technology and popular culture.

Course Code: 231681
Title: DSC(14) Women's Writing
Course Outcomes

CO1 Understand the historical and cultural context of women's writing in India from early times to modern times and analyze the challenges and constraints faced by women writers during this period.

CO2 Interpret the poetic works of women writers from diverse cultural backgrounds to discuss the themes of gender, identity, and empowerment in the poems.

CO3 Evaluate the role of women writers in reshaping the genre of short fiction.

CO4 Reflect on the significance of That Long Silence as a work of feminist literature in the Indian context.

GEOGRAPHY

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231544
Course Title: Population Resources and Dynamics
Course Outcomes (COs)
CO1: Comprehend critically the skills on the demographic composition of a country.
CO2: Examine the dynamics of Geographical Population and Migration
CO3: Evaluate the population resources.
CO4: Analyze population growth issues and challenges&apply various technologies in Representation of demographic data

Course Code: 231545
Course Title: Fundamentals of Remote Sensing
Course Outcomes (COs)
CO1: Interpret the components, history of remote sensing and the types of remote sensors and their platforms
CO2: Interpret aerial photographs and identify the digital and analog data.
CO3: Evaluate the applications of remote sensing and the new satellite programs of India.
CO4: Analyze the ground truth verification using Google Earth and evaluate its usefulness

Course Code: 231644
Course Title: Environmental Geography
Course Outcomes (COs)
CO1. Comprehend the interdisciplinary nature and the relationship between man and the Environment.
CO2. Analyze the functioning of ecosystems and its impact on human activity and global ecological changes.
CO3. Evaluate man-made changes like pollution, environmental hazards, and the depletion of natural resources.
CO4. Examine Environmental policy, impact assessment and conservation measures.

Course Code: 231645
Course Title: Fundamentals of Geographic Information Systems
Course Outcomes (COs)
CO1: Study the definition, components and interdisciplinary domains of GIS.
CO2: Apply geodesy and spatial mathematics for measuring distances and coordinates.
CO3: Analyze the spatial data structures, sources, errors & scales for precision & accuracy.
CO4: Execute geo-processing and visualization techniques including spatial and non-spatial queries.

Course Code: 23INTGEO01
Course Title: - Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship and to Explore Career Opportunities prior to Graduation.
CO2: Develop Communication, Interpersonal Skills, Work Habits and knowledge of the geography required for a job.

HISTORY

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231529
Course Title: History of Karnataka (From11th Century to 1761 CE)
Course Outcomes (COs):

- **CO 1 :** To understand how Chaluckyas of Kalyana came to power, significant progress in polity, cultural both in the Art &Architecture during the rule of Kalachuris and Hoysalas.
- **CO 2 :**To know the establishment of Vijayanagara Empire and Bahammani kingdom and they played a great role in the history of Karnataka
- **CO 3 :**To learn about the strong Muslim shahi states, Wadeyar Dynasty founded as a feudatory principality & it's turning point in the history of Karnataka

Course Code: 231530
Course Title: **India and its Neighbors (1947 to 2020)**
Course Outcomes (COs):

- **CO 1:** To Acquire knowledge of India & its Neighbors, foreign policy, the highs and lows of India's foreign relations.
- **CO 2:** To comprehend the role of Indian Ocean, SAARC, SAPTA and National development.
- **CO 3:** To recognize India's trends in relations and challenges, opportunities & future prospects.

Course Code: 231531
Course Title: Colonialism and Nationalism in Asia
Course Outcomes (COs):
CO 1: To understand about the familiarities with history of modern Asia.
CO 2: To get an acquainted with Colonialism & Nationalism & its effects in Asia.
CO 3: To acquire knowledge of Global Crisis and historical movements.

Course Code: 231629
Course Title: History of Karnataka (From 1761-1956)
Course Outcomes (COs):
CO 1: To know about the history of modern Mysore, especially rule of Wodeyars and Muslim dictators.
CO 2: To get acquainted with nature of colonial rule in Mysore &Coorg.
CO3: To comprehend how the Kannadigas played a role in the Karnataka freedom movement.

Course Code: 231630
Course Title: Regional History-Modern Mysore (1881-1947)
Course Outcomes (COs):
CO 1 : To acquire knowledge about the history of modern Mysore.
CO 2 : To understand the role of British commissioners in princely state of Mysore.
CO3 : To learn the rise & Growth of Backward class & National movement in Mysore.

Course Code: 231631
Course Title: History of China and Japan
Course Outcomes (COs):
CO 1 : To get acquainted how to transform the Chinese society from traditional to modern culture.
CO2 : To comprehend how the Chinese were united towards the foreign colonial powers& defeated them.
CO 3 : To get knowledge in critical thinking & identify historical themes in modern east Asia.

Course Code: 23INTHIS01
Course Title: SEC(2) – Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation.
CO2: Sharpen the domain knowledge and provide core competency skills by developing Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

JOURNALISM

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231558
Course Title: DSC(5) : Introduction To Communication
DSC(5) : Lab :Theory based Practical's on Introduction To Communication
Course Outcomes (COs):
CO1 : Demonstrate knowledge and understanding of the communication and theories.
CO2 : Demonstrate awareness of the diversity of approaches to understanding communication.
CO3 : Culture in both historical and contemporary contexts and approaches.
CO4: Exposure to Technology oriented skills.

Course Code: 231558
Course Title: DSC(5) : Introduction To Communication
DSC(5) : Lab :Theory based Practical's on Introduction To Communication
Course Outcomes (COs):
CO1 : Demonstrate knowledge and understanding of the communication and theories
CO2 : Demonstrate awareness of the diversity of approaches to understanding communication
CO3 : Culture in both historical and contemporary contexts and approaches.
CO4: Exposure to Technology oriented skills.

Course Code: 231559
Course Title: DSC(6) : Media Laws And Ethics
DSC(6) Lab : Theory based Practical's on Media Laws And Ethics
Course Outcomes (COs):
CO 1: Fundamentals of Media Laws and Ethics
CO 2: To maintain Journalistic standards and practices in a variety of newsgathering settings
CO 3: Ethical considerations Journalists face and how they make decisions in those areas.
CO 4: Aware about Professional Bodies

Course Code: 231658
Course Title: DSC(7) : Fundamentals of Radio and Television
DSC(7) Lab :Theory based Practical's on Fundamentals of Radio And Television

MATHEMATICS

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 232539
Course Title:
DSC(5) : Real Analysis-II and Complex Analysis
DSC(5) : Lab :Theory based Practical's on Real Analysis-II and Complex Analysis
Course Outcomes (COs):
CO1 : Computing upper and lower Riemann sums and Criterion for integrability of functions and Mean Value Theorems.
CO2 : Evaluate the properties of analytic functions and harmonic functions.
CO3 : Identifying and evaluating integral theorems and its applications.
CO4 : Analyze and apply various methods of transformations.

Course Code: 232540
Course Title:
DSC(6) : Advanced algebra and Discrete Mathematics
DSC(6) Lab : Theory based Practical's on Advanced algebra and Discrete Mathematics
Course Outcomes (COs):
CO 1: Identify and analyze different algebraic structure such as rings , fields integral domain and so on.
CO 2: Explore the relation between polynomial rings and homomorphism. Compute GCD of polynomials, irreducibility of polynomials and so on.
CO 3 : Analyze vectors and scalars with the operators Gradient, Divergence and Curl.
CO 4 : Compute various types of graph with its properties.

Course Code: 23EMPMAT01
Course Title: SEC(1): Programming with Python (Theory and Practical)
Course Outcomes (COs):
CO1: Examine and Develop solution for polynomial equations, linear equation and problems based on Ages.

CO2: Evaluate the problems on Area, Volume and Surface area for some conic sections.

CO3: Analysis of Direction test, Relation test and seating puzzles using various techniques.

Course Code: 232639
Course Title: DSC(7) : Linear Algebra
DSC(7) Lab :Theory based Practical's on Linear Algebra
Course Outcomes (COs):
CO1 : Analyzing and applying the concepts of Vector spaces , subspaces , basis, dimension and their properties.
CO2 : Applying the concept of Eigen values and Eigen vectors, minimal polynomials, linear transformations etc.
CO3 : Determine properties of inner product spaces and orthogonality in inner product space and vector space.
CO4 : Realize importance of adjoint of a linear transformation and its canonical form.

Course Code: 232640
Course Title: DSC(8) : Numerical Analysis
DSC(8) Lab :Theory based Practical's on Numerical Analysis

Course Outcomes (COs):

CO1: Evaluate various operators arising in numerical analysis such as difference operators, shift operators and so on.

CO2: Various techniques of numerical analysis such as in finding roots , integrals and derivatives.

CO3: Apply the rules of calculus and other areas of mathematics in justifying the techniques of numerical analysis.

CO4: Applicability of techniques of numerical analysis in solving real life problems modified to improve the accuracy.

Course Code: 23INTMAT01

Course Title: Internship

Course Outcomes (COs):

CO1: Integrate Theory and Practical of the area selected for Internship to Explore Career Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

MICROBIOLOGY

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 232579
Course Title: Microbial Genetics (Theory) Microbial Genetics (Practical)
COURSE OUTCOMES (COs):
CO 1: Appreciate the experimental evidences to prove DNA as genetic material and differentiate various method of recombination in bacteria.
CO 2: Comprehend the concepts involved in replication, transcription, andtranslation in bacteria.
CO 3: Acquire information on regulatory mechanisms and gene expression inbacteria.
CO 4: Differentiating gene interaction in viruses and fungi.

Course Code: 232580
Course Title: Food Microbiology (Theory) Food Microbiology (Practical)
COURSE OUTCOMES (COS):
CO1: Appreciate the roles of microbes in food crops production and acquire information on disease of food crops.
CO2: Considerate the association of microbes in food and the quality testing of food and water.
CO3: Comprehend the methods of spoilage of food, the diseases associated with it and acquire broader facts on preservation and food safety protocols.
CO4: Acquire information about properties of milk, methods of preservation of milk and capture facts on types of fermented food and dairy productsand its significance.

Course Code: 23EMPMIB01
Course Title: Microbial and Biochemical Techniques(Theory)
Microbial and Biochemical Techniques(Practical)
COURSE OUTCOMES (COS):
CO1: Demonstrate skills in microbiological and analytical techniques and comprehend the principles which underlie sterilization of culture media, glassware and plastic ware to be used for microbiological work.
CO2: Considerate the principles of a number of analytical instruments which the students have to use during the study and also later as microbiologists for performing various laboratory manipulations and handle several separation techniques which may be required to be handled later as microbiologists.

Course Code: 232679
Course Title: Immunology and Medical Microbiology(Theory)
Immunology and Medical Microbiology (Practical)
COURSE OUTCOMES (COS):
CO1: Gain preliminary information about various immune mechanisms and articulate the concepts of antigen, antibodies and its classes.
CO2: Familiarize with immunological techniques and sero-diagnosis of infectious diseases**.**
CO3: Emphasize the pathogenic bacterial infections, pathogenesis, symptoms, and diagnosis and treatment process.
CO4: Emphasize the pathogenic viral, fungal infections, its pathogenesis, symptoms, diagnosis and treatment process also comprehend the concepts of antimicrobial agents and antibiotic resistance.

Course Code: 232680
Course Title: Industrial Microbiology (Theory) Industrial Microbiology (Practical)

COURSE OUTCOMES (COS):

CO1: Considerate the overview of scope and importance of industrially important microbes and compare different types of fermentation processes and equipment's.

CO2: Acquire broader facts of purification of value-added products.

CO3: Comprehend facts on the concepts and terminology in geneticengineering.

CO4: Competent about principles involved in manipulating genes and DNA and emphasize with various techniques used in genetic engineering.

Course Code: 23INTMIB01

Course Title: SEC(2) – Internship

Course Outcomes (COs):

CO1: Integrate Theory and Practice of the area selected for Internship to ExploreCareer Opportunities prior to Graduation.

CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

PHYSICS

Program Outcomes (POs) for Bachelor of Science

PO 1: Domain Knowledge -Acquire and apply knowledge of science in relevant areas.

PO 2: Problem Analysis - Recognize real-world problems and user's requirements to propose solutions for the same using basic principles of science.

PO 3: Design and Development of Solutions - Developing solutions and inferences for complex problems using critical and analytical thinking.

PO 4: Investigation & Research - Ability to formulate hypothesis, augment research questions and identify & refer relevant sources for examining or inspecting technical issues as per their level of understanding and knowledge.

PO5: Use of Modern Techniques/Tools - Use digital resources, various software/platforms and appropriate techniques to interpret concepts of science.

PO6: Impact of Science on Society - To prepare competent human resource and to develop scientific attitude at local and global levels for social benefit.

PO7: Environment and Sustainability - Apply the knowledge gained for conserving environment and to handle environmental issues with sustainable solutions.

PO8: Moral and Ethical Values - Imbibe moral values and professional ethics to maintain the integrality in a professional scenario while being aware of the cultural diversities.

PO9: Individual and Team Work with Time Management - Work productively in a team or as an individual while exhibiting time management skills.

PO 10: Communication - Develop the caliber to convey various concepts of science effectively.

PO 11: Project Management and Finance - Set up enterprises/companies and build entrepreneurship, project management and finance planning skills.

PO 12: Life-long Learning - Engage in the art of self-directed learning.

Course Code: 232529
Course Title: DSC(5)- Classical Mechanics-I and Quantum Mechanics-I (Theory)
DSC(5)-Lab
Course Outcomes (COs)
CO1- Comprehension of Newton's laws of motion, conservation momentum and energy. And to gain knowledge on constrains, degrees of freedom and harmonic oscillator.
CO2- To gain knowledge on Hamiltonian mechanics.
CO3- Identify the failure of classical physics at the microscopic level. Explain the minimum uncertainty of measuring both observables on any quantum state.

CO4- Analyze the time-dependent and time-independent Schrödinger equation for simple potentials like for instance one-dimensional potential well and Harmonic oscillator.

Course Code: 232530
Course Title: DSC(6)- Elements of Atomic, Molecular and Laser Physics (Theory)
DSC(6)-Lab
Course Outcomes (COs)
CO1- Gain knowledge on various atomic models and implementing it for experimental methods.
CO2- Interpretation of atomic spectra of elements using vector atom model.
CO3- Implementing molecular spectra of compounds using basics of molecular physics.
CO4- Gaining knowledge on laser systems and their applications in various fields.

Course Code: 232629
Course Title: DSC(7)- Elements of Condensed Matter & Nuclear Physics (Theory)
DSC(7)-Lab
Course Outcomes (COs)
CO1- Acquiring the knowledge on Crystal systems , X-rays and free electron theory of metals
CO2- Comprehending the knowledge of magnetism, dielectrics and superconductivity.
CO3- Analyzing the processes of alpha, beta and gamma decays based on well-established theories.
CO4- Gaining knowledge about the basic aspects of interaction of gamma radiation with matter by photoelectric effect, Compton scattering and pair production and to differentiate nuclear radiation detectors such as ionization chamber, Geiger-Mueller counter etc.

Course Code: 232630
Course Title: DSC(8)- Electronic Instrumentation and Sensors (Theory)
DSC(8)-Lab
Course Outcomes (COs)
CO1- Identifying the different types of tests and measuring instruments used in practice and understand their basic working principles.
CO2- Comprehending and giving a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.
CO3- Implementation and understanding the data conversion and to analyze its output display.
CO4- Gaining the knowledge about the different types of transducers and sensors.

Course Code: 23INTPHY01
Course Title: Internship
Course Outcomes (COs):
CO1: Integrate Theory and Practice of the area selected for Internship to Explore Career Opportunities prior to Graduation and to create interest towards research.
CO2: Develop Communication, Interpersonal, Work Habits, Attitude and other Critical Skills required for a job.

PSYCHOLOGY

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231565
Course Title: DSC(5) Health Psychology (Theory)
DSC(5) Lab - Psychology (Practical)
Course Outcomes (COs):
CO1 – Elucidate the Concept of Health & Wellbeing and analyze the nature, significance, and subject matter of Health Psychology.
CO2 – Determine and deconstruct the Health Enhancing and Compromising Behaviors.
CO3 – Demonstrate the nature of Stress, comprehend its impact on the overall Health and introspect the coping strategies.
CO4 – Identify and describe the nature of Pain, Correlates of Pain and Illness and reflect upon the Management of Pain & Illness.

Course Code: 231566
Course Title: DSC(6) Social Psychology (Theory)
DSC(6) Lab - Psychology (Research Project)
Course Outcomes (COs):
CO1 – Enumerate the nature and scope of Social Psychology and illustrate its significant impact on Individual Behaviour.
CO2 – Concretely analyze the dynamics involved in Social Processes and illuminate their interaction with the Social World.
CO3 – Comprehensively understand and determine the essence of Interpersonal Relationships on Individual Behaviour.
b – Demonstrate and conceptualize the nature of Social Issues and deduce the complexities that centre the Social Behaviours.

Course Code: 231665
Course Title: DSC(7) Abnormal Psychology (Theory)
DSC(7) Lab - Psychology (Practical)
Course Outcomes (COs):
CO1 – Elucidate and analyze the construct of Normality & Abnormality to dispel myths regarding abnormality.
CO2 – Describe and familiarize the criteria of Abnormality and the Classification Systems of psychological disorders.
CO3 – Demonstrate the nature, Symptomology and etiology of various Psychological Disorders.
CO4 – Conceptualize the essence of Personality Disorders in relevance Abnormality.

Course Code: 231666
Course Title: DSC(8) Organizational Psychology (Theory)
DSC(8) Lab - Psychology (Internship)
Course Outcomes (COs):
CO1 – Articulate and conceptualize the fundamentals of Organizational Psychology and infer the basic concepts comprehensively.
CO2 – Concretely relate and synthesize the basics of Individual differences and Job Stress.
CO3 – Define, Integrate, and determine the nature and nexus of Organizational Perception and Learning.
CO4 – Analyze and contrast the inherent characteristics of Organizational Structure and Culture.

SOCIOLOGY

Program Outcomes (POs) for Bachelor of Arts

PO 1: Domain Knowledge: Inculcation of fundamental concepts, principles, methods and the application of the same in the realm of the concerned domain.

PO 2: Problem Analysis: This programme enhances the ability to define, identify and analyze appropriate means towards amicable solutions in the given area of Knowledge.

PO 3:Design& Development of Solutions: Structuring theoretical knowledge and developing customized designs in terms of – Intervention strategies, Profiling, Reviews, Archives, Marketing strategies, Infographics and Approaches for arriving at relevant and desirable solutions.

PO 4:Research& Investigation: Knowledge and application of "Research Methods" to investigate domain-specific problems and derive scientific conclusions through the testing of Hypotheses and relevant findings empirically.

PO5:Usage of Modern Tools and Techniques: Mastery in the academic enclave through skilled handling administering, assessing, validating and interpreting complex phenomena using advanced tools and techniques to create simple and sustainable solutions.

PO6: Social Sciences & Society – Promotes domain-specific literacy to illuminate the significance of each discipline and its applicability to the well-being of Society.

PO7: **Environment and Sustainability:** Contemplate and Introspect prevailing environmental challenges and consequences. Further, channel the initiatives towards sustainability.

PO8:Moral and Ethical Values: Application of Professional Ethics, Humanitarian Values, Accountability and Social Responsibilities in emerging society towards the attainment of harmony and co-existence.

PO9: **Individual and Teamwork:** Imbibe the qualities of Teamwork and function effectively as an emerging leader in diversified and multidisciplinary areas.

PO 10: **Communication:** Demonstrates Competency in comprehending and conceptualizing discipline-specific concepts and ideas and communicates effectively through fluid communication within the professional and social setup.

PO 11: **Economics and Project Management:** Understand the Economic Concept in the context of a specific discipline and apply the same through initiating Planning, and Executing the Project Dynamics effectively towards successful Project Management.

PO 12: Lifelong Learning: Identify and address their own educational needs in a changing world in ways sufficient to upgrade one's skills and competencies through constant self-evaluation and eternal learning.

Course Code: 231551
Course Title: Social Entrepreneurship
Course Outcomes (COs)
CO1: Recognise the scope and need for social entrepreneurship.
CO2: Illustrate the plan and implement socially innovative ideas.
CO3: Equipped to start their own social enterprise or non-profit organization.
CO4: Critically analyse the role of social entrepreneurship in combating the social issues.

Course Code: 231552
Course Title: DSC (10) Society and Tribes
Course Outcomes (COs)
CO1: Recognise the social organization among the tribals.
CO2: Examine the impact of social changes on tribal social life.
CO3: Equipped to handle micro research work and communicate effectively.
CO4: Recognise the reality of tribal settlements and their challenges.

Course Code: 231553
Course Title: Statistics in Sociological Research
Course Outcomes (COs)
CO1: Examine the research methods.
CO2: Evaluate the appropriate statistical techniques.
CO3: Identify and examine relationships among variables.
CO4: Enrich the knowledge of statistical research methods.

Course Code: 231651
Course Title: Sociological Perspectives
Course Outcomes (COs)
CO1: Analyse the significance of major Sociological theories
CO2: Critically examine the fundamental theoretical categories
CO3: Identify the different nuances of concepts and terms.
CO4: Recognise the need and importance of social interaction and reflective relations in society.

Course Code: 231652
Course Title: Sociology of Health
Course Outcomes (COs)
CO1: Analysethe concept of health, illness and social conditions
CO2: Analyse the relationship between social factors and health status
CO3: Examine the role of medical doctors, paramedics, pharmaceutical industry and social institutions in maintaining and promoting health.
CO4: Critically evaluate the role of hospitals & pharma companies in providing health services.

Course Code: 231653
Course Title: Society in Karnataka
Course Outcomes (COs)
CO1: Acquaint and appreciate the cultural aspects of Karnataka.
CO2: Critique and examine the social changes occurring in Karnataka.
CO3: Identify the usefulness of sociological study in contemporary society.
CO4: Examine the changing social institutions and their impact on social life.

Course Code: 23INTSOC01
Course Title: Internship
Course Outcomes (COs):
CO1: Able to understand social phenomena.
CO2: Will engage in community development programs.

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Department of Business Administration

Program Outcomes:

PO1: Apply knowledge of Business Management and Management specialization.

PO2: Identify, formulate research literature, and analyze business Management problems.

PO3: Design solutions for complex business management problems that meet specified needs with appropriate considerations for profits- people- planet.

PO4: Conduct investigations of complex business management problems using research band knowledge, analysis of secondary data, and interpretation of the same.

PO5: Create, select, and apply appropriate techniques, resources, and IT tools, including modeling and solution generation.

PO6: Apply reasoning informed by contextual knowledge to areas of social, health, safety, legal, and cultural issues

PO7: Understand and evaluate the sustainability and impact of business management work in the solution in societal and sustainability contexts.

PO8: Apply ethical principles and commit to professional ethics and norms of business management practice.

PO9: Function effectively as an individual and as a member or leader in diverse teams and multi-specialization teams

PO10: Able to comprehend and write effective reports and make effective presentations, including documentation and retrieval

PO11: Demonstrate business management knowledge and understanding of business management principles.

PO12: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning.

I Semester

Hardcore: Management Theory & Practices **Course code:23C101**

Course Outcome:

CO1: Acquire the conceptual knowledge of Management and various functions of Management.

CO2: Apply managerial knowledge in real-world situations.

CO3: Develop a greater understanding of Management.

CO4: Demonstrate their exposure to recent trends in management.

CO5: Ability to understand the management process in the corporate world.

Hardcore: Organizational Behaviour **Course code:23C102**

Course Outcome:

CO1: Analyse the behaviour of individuals in the organization.

CO2: Critically examine the potential effects of behavioral issues on the organization.

CO3: Distinguish between Teams and Groups and devise methods to enhance their functioning.

CO4: Identify and develop techniques to motivate individuals.

CO5: Assess Leadership qualities and abilities required to sustain.

Hardcore: Managerial Economics **Course code:23C103**

Course Outcome:

CO1: Develop the fundamental concepts of microeconomics used to facilitate the problem of scarcity and resource allocation in the context of choices and opportunity cost.

CO2: Examine the factors determining the Demand and Supply, elasticities.

CO3: Deduce the cost, revenue, and production functions for business implications. CO4:

Assess the different market conditions, the intensity of competition, and conditions for equilibrium in different types of markets.

CO5: Develop the fundamental concepts of macroeconomics to facilitate Business Strategies.

Hardcore: Accounting for Managers **Course code:23C104**

Course Outcome:

CO1: Demonstrate the applicability of the accounting principles to prepare the accounting to understand the managerial decisions

CO2: Demonstrate the applicability of the depreciation concept to prepare reports and make managerial decisions.

CO3: Prepare the final account reports with the accounting tools and concepts and facilitate managerial decisions.

CO4: Apply the financial statement analysis associated with financial data in the organization.

CO5: Application of latest development trends & practices in accounting Concepts.

Hardcore: Business Communication **Course code:23C105**

Course Outcome:

CO1: Remember the basics of written and oral communication

CO2: Appraise the communication situations and forms

CO3: Exhibit understanding by analyzing any given business situations

CO4: Apply negotiation strategies, demonstrate the usage of communication networks, and adopt employment communication for career growth.

CO5: Prepare business letters, and reports and adopt case methods of learning.

Hardcore: Business Statistics **Course code:23C106**

Course Outcome:

CO1: Enable to understand and apply statistics concepts and execute decisions.

CO2: Enable to remember the concept and statistics formula to use it appropriately.

CO3: Enable to apply the statistics tools and techniques to draw valid conclusions and to make appropriate decisions

CO4: Students will be able to analyze alternate solutions obtained by using Quantitative Techniques and justify their selection of decision.

CO5: Critically evaluate the results and make a management decision

Softcore: Computer Application in Management **Course code:23C107**

Course Outcome:

CO1: Recognize when to use each of the Microsoft Office programs to create professional and academic documents.

CO2: Perform basic analysis using word processing, spreadsheet, and PowerPoint and create professional and academic documents.

CO3: Use Microsoft Office programs to create personal, academic, and business documents following current professional and/or industry standards.

CO4: Apply computer skills and concepts for basic use to create personal, academic and business documents in the workplace.

CO5: To equip students with presentation skills through the use of Microsoft Office Programs.

Hardcore: Skill Development – 1 **Course code:23C108**

Course Outcome:

CO1: The student will develop a high level of proficiency in the targeted skill, showcasing the ability to perform tasks and solve problems related.

CO2: The student will be able to communicate ideas, strategies, and solutions related to the skill clearly and effectively

CO3: The student will be able to decide the appropriate mediums such as written reports, oral

presentations, or visual aids.

CO4: The student will be able to develop a high level of proficiency in writing emails.

CO5: The student will be able to understand underlying principles and how they relate to practical applications.

SEMESTER II

Hardcore: Marketing Management **Course code: 23C201**

Course Outcome:

CO1: At the end of this course, the students will be able to formulate marketing strategies that incorporate psychological and sociological factors that influence buying.

CO2: Understand branding; identify marketing channels and product distribution through various sales promotion techniques.

CO3: Identify, define, and analyze the marketing problems

CO4: Able to analyze the product pricing, branding, and marketing strategies at various levels of PLC.

CO5: Able to frame proper marketing and communication mix strategies for the target group.

Hardcore: Human Resource Management **Course code: 23C202**

Course Outcome:

CO1: Ability to plan human resources and develop competency in job analysis.

CO2: Competency to recruit and select employees.

CO3: Competency to train people and evaluate training.

CO4: Ability to design appraisal performance systems and appraise employees' performance.

CO5: Design of compensation and salary administration.

Hardcore: Corporate Finance Course code: 23C203 Course Outcome:

CO1: Students will define concepts and classify – interpret summarize concepts in Finance.

CO2: Students will be able to apply financial concepts in sourcing and investment decisions.

CO3: Students will be able to analyze, and compare to make appropriate decisions.

CO4: Students will be able to critically evaluate financial decisions and justify financial decision.

CO5: Students will be able to plan and design capital structures, investment decisions.

Hardcore: Business Research Methods Course code: 23C204

Course Outcome:

CO1: To develop an understanding of the basic framework of the research process in business decision-making.

CO 2: To develop an insight into various research designs and techniques.

CO 3: To understand some basic concepts of research and its methodologies

CO 4: Devise tools and methods for data collection using Sampling techniques.

CO 5: To be able to write research reports and be thesis-independent.

Hardcore: Operations Management Course code: 23C205

Course Outcome:

CO1: Provide an outline of the concepts, principles, and theories related to Production and Operations management

CO2: Understand the importance of Production and operations Planning, Process and Design.

CO3: Evaluate the Demand Forecast Through Various Forecasting Techniques.

CO4: Evaluate the various approaches and strategies for Business Locations, Layout Designs

CO5: Evaluate the Inventory Management Process through various models.

Hardcore: Legal Aspects of Business **Course code: 23C206**

Course Outcome:

CO1: Analyse various laws about business organizations.

CO2: Distinguish between various foreign exchange transactions required by business organizations.

CO3: Recognize and identify the rights and responsibilities of consumers.

CO4: Explain the rights of the creator through IPR.

CO5: Review the provisions for different kinds of companies.

Hardcore: Business Analytics **Course code: 23C207**

Course Outcome:

CO1: Understand the Scope and Importance of Business Analytics through the various approaches to Business Decision Making.

CO2: Analyse the application of business analysis in different domains.

CO3: Use measures of dispersion, compute and interpret the results of Correlation and Regression Analysis in business forecasting and decisions.

CO4: Demonstrate the use of decision theory to handle uncertain business situations.

CO5: Find optimal solutions by various data analytics techniques.

Hardcore: Management Information System **Course code: 23C208**

Course Outcome:

CO1: Ability to make informed decisions using information systems.

CO2: Develop knowledge about system development and usage of web portals.

CO3: Develop technical skills in using functional modules in business.

CO4: Develop skills to apply technology in business- and business-related decision- making.

CO5: Develop skills to apply ERP skills in Business management.

Hardcore: Skill Development - 2 **Course code: 23C209**

Course Outcome:

CO1: The student will develop a high level of proficiency in setting goals to become successful managers.

CO2: The student will be able to perform tasks and solve problems related.

CO3: The student will learn to work in teams and become a team member.

CO4: The student will be able to improve on body language and related skills fit for managers.

CO5: The student will be able to understand Grooming and other Etiquette required in professional life.

SEMESTER III

Hard Core: Strategic Management **Course code: 23C301**

Course Learning Outcomes

CO1. Understand strategy as a process of envisioning and planning to create SCA and achieve above-average returns

CO2. Demonstrate the knowledge in formulating strategies to gain SCA

CO3. Analyze the competitive environment of business

CO4. Evaluate challenges and opportunities faced by managers in pursuing growth strategies

CO5. Select suitable strategic approaches to build and implement

Hard Core: Entrepreneurship **Course code: 23C302**

Course Learning Outcome

CO1: Comprehend and Understand the fundamentals of Entrepreneurship

CO2: Competence to develop a business plan

CO3: Understand the Rural & Social Entrepreneurial Classification

CO4: Analyze and evaluate the Critical Challenges of Entrepreneurship

CO5: Inculcate Entrepreneurial Perspectives, and, Entrepreneurial Growth.

ELECTIVE COURSE: Consumer Behaviour **Course code: 23C3M1**

Course Learning Outcomes

CO1: Explore and compare the core theories of consumer behavior in both consumer and organizational markets

CO2: Appraise models of Consumer Behavior and determine their relevance to particular marketing situations

CO3: Analyze and demonstrate theories to real- world marketing situations by profiling and identifying marketing segments

CO4: Apply and enhance abilities to input this knowledge in the marketing planning process, particularly in market segmentation, positioning, and marketing mix development

CO5: Critique the theoretical perspectives associated with consumer decision making, including recognizing cognitive biases and heuristics

Elective Course: Advertising, Sales & Promotion Management Course code: 23C3M3

Course Learning Outcomes:

CO1: Able to choose optimal advertisement media through a proper agency;

CO2: Able to ensure ethics and standards of advertising.

CO3: Distinguish different situations in the competitive environment that affect choices in target marketing

CO4: Able to communicate marketing information persuasively and accurately in oral, written, and graphic formats

CO5: Contribute to evaluating the effectiveness of advertising and marketing communications initiatives

ELECTIVE COURSE: Advance Financial Management Course code: 23C3F1

Course Learning Outcome

CO1. Recognize the importance of financial management from a strategic perspective

CO2. Apply the methods and procedures of financial management, with particular reference to long-term and short-term financing decision

CO3. Compare various models of investment decision-making under uncertainty CO4. To understand and analyze the role of financial models and forecast company's funding needs

CO5. To analyze the financial implications of various business strategies and the strategic management of finance

Elective Course: Banking, Financial Services and Insurance Course code: 23C3F2

Course Learning Outcome

CO1: Students will be able to describe banking and central banking functions CO2: Students will be able to explain, interpret- summarize, and classify the banking activities

CO3: Students will be able to apply the regulatory framework to banking and insurance

CO4: Students will be able to analyze the types and applications of insurance, financial services, and financial performance

CO5: Students will be able to critically evaluate the developments in financial markets and various products

ELECTIVE COURSE: Investment Analysis & Portfolio Management

Course code: 23C3F3

Course Learning Outcome

CO 1. The students will understand the various Instruments and alternatives for investment.

CO 2. The students will be able to assess the risk and return associated with investments.

CO 3. The students will be able to analyze the Economy, Industry, and Company framework for Investment Management.

CO 4. The students will learn the theories of Portfolio management and also the tools and techniques for efficient portfolio management.

CO 5. The students will learn portfolio construction and performance evaluation.

ELECTIVE COURSE

GROUP 3: HUMAN RESOURCE MANAGEMENT

ELECTIVE COURSE: Personal Growth & Interpersonal Effectiveness

Course code: 23C3H1

COURSE LEARNING OUTCOME

CO1. Ability to set short-term and long-term goals.

CO2. Ability to distinguish between cultures, change attitudes of people, and develop knowledge on improving job satisfaction of employees.

CO3. Develop learning skills and skills related to positive reinforcement.

CO4. Ability to identify an individual ‘s personality type favorable or unfavorable to work performance.

CO5. Ability to identify sources and causes of conflicts and stress and develop conflictre solution and coping strategies

ELECTIVE COURSE: Organizational Change & Development Course code: 23C3H2

Course Learning Outcomes

CO1: Develop the knowledge of planning for organizational change and apply appropriate strategies for implementing planned change.

CO2: Ability to identify the sources of resistance to change and overcome resistance to change.

CO3: Ability to apply theories of change management in the work environment.

CO4: Application of appropriate OD intervention for organizational change and development.

CO5: Build a perspective organizational design including recent Advancement and link them with various relevant theoretical streams.

ELECTIVE COURSE: Training & Development Course code: 23C3H3

Course Learning Outcome

CO 1. Assess the importance of training in organizations.

CO 2. Compute training needs analysis for organizations.

CO 3. Compare and contrast different training methods.

CO 4. Identify the skills required for the trainer.

CO 5. Evaluate the effectiveness of training programs through various models and theories.

ELECTIVE COURSE GROUP 4 CORPORATE SOCIAL RESPONSIBILITY

ELECTIVE COURSE: Fundamentals of CSR Course code: 23C3C1

Course Learning Outcome

CO1: To learn the concepts and theories of CSR

CO2: To know the importance of sustainable development goals

CO3: To understand the role of NGOs in promoting and implementing CSR initiatives in India

CO4: To evaluate futuristic role of CSR in India

CO5: To comprehend the role of non-profit & Local Self- Governance in implementing CSR

ELECTIVE COURSE: Social Developing Issues & Challenges Course code: 23C3C2

Course Learning Outcome:

CO1: The students will be enlightened on the principles and practices of

CO2: NGOs, Cooperatives and Corporate foundations

CO3: Comprehend contemporary social issues and equate social work intervention

CO4: Understand Social legislations and rights of the marginalized

CO5: Cognize MDG, SDG and Government of India policies for social security

CO6: Recognize the need for corporate community collaboration

ELECTIVE COURSE: Corporate Governance & Ethics Course code: 23C3C3

Course Learning Outcome:

CO1: The students should be able to appreciate the nature of business ethics, ethical leadership

CO2: The students must comprehend theoretical aspects of corporate governance

CO3: Comprehend corporate ethics in different dimensions

CO4: Understand different committees in Indian organizations

CO5: Categorize Accounting standards and Non-Accounting Regulations in Corporate Governance

ELECTIVE COURSE GROUP 5 TOURISM & TRAVEL MANAGEMENT

ELECTIVE COURSE: Tourism Management Course Code: 23C3T1

Course Outcomes

CO1: To acquire the conceptual clarity of tourism.

CO2: To enhance the knowledge related to impacts on tourism.

CO3: To acquire the background knowledge of types, typologies of tourism. To acquire the concepts, relate to economics of tourism.

CO4: To acquire the knowledge of international, national and regional organizations of tourism.

ELECTIVE COURSE: Global Tourism Geography Course Code: 23C3T2

Course Outcomes:

CO1: To acquaint with the interdependence between geography and tourism;

CO2: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the American continents.

CO3: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the European continents.

CO4: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the African continents.

CO5: To be able to plan tour itineraries of various countries across time zones.

ELECTIVE COURSE: Hotel Operation & Management Course Code: 23C3T3

Course Outcomes:

CO1: To acquire the concepts and functions of hotel and hospitality operations and management

CO2: To familiarize with front office operations.

CO3: To familiarize with accommodation management. To familiarize with food & beverage management.

CO4: To enhance the knowledge related to evaluating hotel performance and revenue management

ELECTIVE COURSE: Tourism Management **Course Code: 23C3T1**

Course Outcomes

CO1: To acquire the conceptual clarity of tourism.

CO2: To enhance the knowledge related to impacts on tourism.

CO3: To acquire the background knowledge of types, typologies of tourism.

CO4: To acquire the concepts, relate to economics of tourism.

CO5: To acquire the knowledge of international, national and regional organizations of tourism.

ELECTIVE COURSE: Global Tourism Geography **Course Code: 23C3T2**

Course Outcomes:

CO1: To acquaint with the interdependence between geography and tourism;

CO2: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the American continents.

CO3: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the European continents.

CO4: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the African continents.

CO5: To be able to plan tour itineraries of various countries across time zones.

ELECTIVE COURSE: Hotel Operation & Management **Course Code: 23C3T3**

Course Outcomes:

CO1: To acquire the concepts and functions of hotel and hospitality operations and management

CO2: To familiarize with front office operations.

CO3: To familiarize with accommodation management.

CO4: To familiarize with food & beverage management.

CO5: To enhance the knowledge related to evaluating hotel performance and revenue management

SEMESTER IV

Hard Core: Project Appraisal & Management **Course code: 3C401**

COURSE LEARNING OUTCOME

CO1. Identify different concepts, contemporary methods, and systems for project management and appraisal.

CO2. Understand specialized evaluation techniques to determine and evaluate project feasibility.

CO3. Apply, synthesize, and communicate the financial context of projects and compare alternative projects.

CO4. Critically analyses risk parameters to decide the selection of projects. CO5. To acquire knowledge and competencies to successfully implement the project

Hard Core: Capstone Project Report **Course Code: 23C406**

COURSE OUTCOME

CO1: Improve student's research and personal skills

CO2: Upgrade student's experience of practical work thereby enhancing professional growth and experience

CO3: Creating valuable employees and competent job applicants for the companies

ELECTIVE COURSE GROUP 6 MARKETING

ELECTIVE COURSE: Brand Management Course Code: 23C4M4

Course Outcomes:

CO1. Enable the students to develop the critical importance of raising awareness of a product by Branding and understanding various dimensions of the Gamut of Branding.

CO2. Develop the vital role of understanding product launching strategies and how they play an important part in the survival and thriving of business.

CO 3. Helping the student realize the growing importance of strategic approaches in planning, executing, and evaluating marketing strategies using Branding.

CO 4. Assisting the students comprehend a holistic ability to develop tenable programs to make a brand robust and seamlessly help protect and promote a product and its business.

CO 5. To enable the student to appreciate the need for practicing values, principles, and ethics in Business and to be able to acknowledge, appreciate, and apply Brands to project a strong sense of association.

ELECTIVE COURSE: Industrial Marketing Course Code: 23C4M5

COURSE LEARNING OUTCOME

CO1. Students will know key concepts, theories, and models required to understandthe unique phenomena that emerge in managing business-to- business marketing.

CO2. Students will be able to identify, categorize, and analyze the various components of the Business marketing-related issues required in managing market relationships.

CO3. Students will be able to appreciate a given market situation and apply relevantconcepts and tools that increase efficiency and effectiveness.

CO4. Students will be able to evaluate a given service situation, develop strategies,and develop interventions required to address key issues in markets. CO5. Build upon important workplace skills through active learning activities and other classroom exercises.

ELECTIVE COURSE: Services Marketing **Course Code: 23C4M6**

COURSE LEARNING OUTCOME

CO1: At the end of this course the students will be able to analyses and evaluate consumer behavior in the services sector;

CO2: Ensuring customer service delivery through various channels; and able to promote services across various service sectors.

CO3: Provide analytical skills to recognize the service as a strategy that supports broader marketing decisions.

CO4: Evaluate the capacity and demand management in service marketing.

ELECTIVE COURSE: International Marketing **Course Code: 23C4M7**

COURSE OUTCOME

CO1. Develop an understanding of and an appreciation for basic international marketing concepts, theories, principles, and terminologies.

CO2. Be able to demonstrate an awareness and knowledge of the impact of environmental factors (cultural, economic, institutional, legal, and political) on international marketing activities.

CO3. Be capable of identifying international customers through conducting marketing research and developing cross-border segmentation and positioning strategies by applying product pricing promotion and channels of distribution in international settings.

CO4. Be capable of appreciating various schemes, initiatives, and policies of the government of India to promote exports on a sustained basis and to optimize the utilization of detailed resources.

CO 5. Exposing the student to various international economic institutions and forums to promote international trade and appreciating the dimensions of global aspects of trade, commerce, and international relations.

ELECTIVE COURSE GROUP 7 FINANCE

ELECTIVE COURSE: Mergers, Acquisition & Corporate Restructuring **Course Code: 23C4F4**

COURSE LEARNING OUTCOME

CO1. Understand the mergers, acquisition, and restructuring strategies

CO2. Make an informed decision with due diligence

CO3. Apply Business valuation approaches

CO4. Evaluate purchase consideration in Mergers and Acquisition

CO5. Analyze the Legal and Regulatory aspects of merger and acquisition

ELECTIVE COURSE: Derivatives **Course code: 23C4F5**

COURSE LEARNING OUTCOME

CO1.The student will be able to remember the fundamental concepts of derivative instruments.

CO2. The student will be able to understand the concepts of derivatives as a financial risk management tool.

CO3. The student will be able to apply the concepts of derivative instruments to real- life situations and compute the fair value of derivative instruments.

CO4. The student will be able to analyze the situation and adopt the appropriate strategy of speculation, arbitrage, or hedging based on the situation.

CO5. The student will be able to evaluate the results of various strategies adopted basedon the situation. Demonstrate the application of concepts learned to practical situations involving several cases of cost control and management.

ELECTIVE COURSE: International Finance **Course code: 23C4F6**

COURSE LEARNING OUTCOME

CO 1. Analyze the international integration of financial markets.

CO 2. Measure Foreign Exchange Exposure and Hedge Foreign Exchange Exposure.

CO 3. Apply financial knowledge in forecasting foreign exchange rates. CO 4. Understand strategies used by Multinational Corporations. CO 5. Evaluate projects using International Capital Budgeting

ELECTIVE COURSE: Corporate Tax **Course code: 23C4F7**

COURSE LEARNING OUTCOME

CO 1. The students will understand the different types of companies and their residential status.

CO 2. The students will be able to assess the sources of income and total taxable income

CO 3. The students will understand corporate tax management regarding advance tax TDS, and TCS.

CO 4. The students will understand various corporate tax planning which will help to make better decisions

HUMAN RESOURCE MANAGEMENT

ELECTIVE COURSE: Strategic Human Resource Management Course code: 23C4H4

COURSE LEARNING OUTCOME

CO 1. Recognize the fundamentals of the SHRM framework and analyze theoverall role of SHRM in business.

CO 2. Compute the strategic planning for Human resources.

CO 3. Design the training program strategically as required for the organization.

CO 4. Design and implement compensation packages for human resources.

CO 5. Gain insights on various operations of HRM at the International level.

ELECTIVE COURSE: Industrial Relations & Labour Legislation

Course code: 23C4H5

COURSE LEARNING OUTCOME

CO1: Students are acquainted with the concepts, principles, and issues connected with trade unions.

CO2: Students are acquainted with Collective bargaining and grievance Redressals

CO3: Students Can reflect on Regulative & Protective Legislations.

CO4: Students Can reflect and Summarize Wage Related & Social Security Legislation

CO5: Students Can reflect upon New Labour Codes.

ELECTIVE COURSE: International Human Resource Management

Course code: 23C4H6

COURSE LEARNING OUTCOME

CO1: Demonstrate how global HRM functions are different from generic HRM functions in the domestic arena and understand various concepts and practices withinthe field of global HRM

CO2: Identify the impact of global factors (cultural and contextual factors) in shaping HR practices

CO3: Outline the implications of globalization on people management in multi-national organizations

CO4: Examine the issues and problems faced by MNCs in their people management activities

CO 05: Identify the impact of global factors in shaping compensation, performance appraisal, and management

ELECTIVE COURSE: Managing Knowledge Workers Course code: 23C4H7

COURSE LEARNING OUTCOMES

CO1: Recognize the significance of knowledge workers in an organization. CO2: Gain knowledge on effective harnessing of organizational knowledge. CO3: Identify the role of a knowledge leader in achieving team goals.

CO4: Realize the association between knowledge management and HRM practices.

CO5: To effectively instill HRM practices in organizational structure to manage knowledge workers

CORPORATE SOCIAL RESPONSIBILITY

ELECTIVE COURSE: Brand Management Course code: 23C4C4

COURSE LEARNING OUTCOMES:

CO1. Enable the students to develop the critical importance of raising awareness of a product by Branding and understanding various dimensions of the Gamut of Branding.

CO2. Develop the vital role of understanding product launching strategies and how theyplay an important part in the survival and thriving of business.

CO 3. Helping the student realize the growing importance of strategic approaches in planning, executing, and evaluating marketing strategies using Branding.

CO 4. Assisting the students comprehend a holistic ability to develop tenable programsto make a brand robust and seamlessly help protect and promote a product and its business.

CO 5. To enable the student to appreciate the need for practicing values, principles, and ethics in Business and to be able to acknowledge, appreciate, and apply Brands to project a strong sense of association.

ELECTIVE COURSE: International Business & CSR Course code: 23C4C5

Course Learning Outcome

CO1: The students will be highlighted various concepts of t h e International Business

process

CO2: The students will be introduced to t h e relationship between CSR and International Business

CO3: Understand Globalization and its impact on the Indian economy

CO4: Get introduced to international conventions relevant to CSR

CO5: Understand the challenges in Managing the Multinational Business.

ELECTIVE COURSE: Sustainability & Stakeholder Management

Course code: 23C4C6

Course Outcome:

CO1: The students will be introduced to the concepts and importance of sustainability

CO2: The students will get insights into stakeholders' management

CO3: Awareness of governments, NGOs, and international and supranational organizations in corporate sustainability

CO4: Ability to Develop strategies for sustainability

CO5: Knowledge of stakeholder management, Challenges, and Solutions.

ELECTIVE COURSE: Industrial Relations **Course code: 23C4C7**

COURSE LEARNING OUTCOME

CO1: Students are acquainted with the concepts, principles, and issues connected with trade unions.

CO2: Students are acquainted with Collective bargaining and grievance Redressals

CO3: Students Can reflect on Regulative & Protective Legislations.

CO4: Students Can reflect and Summarize Wage Related & Social Security Legislation

CO5: Students Can reflect upon New Labour Codes.

ELECTIVE COURSE GROUP 10 TOURISM & TRAVEL MANAGEMENT

ELECTIVE COURSE: Travel Agency & Transport Management Course code: 23C4T4

Course Outcomes:

CO1: To acquire the functions and contribution of travel agencies and tour operators to the tourism sector.

CO2: To enhance the knowledge of tour operations business and its process.

CO3: To acquire background knowledge of travel formalities.

CO4: To enhance the knowledge of transport systems in linkage with tourism aspects.

CO5: To acquire the background knowledge of aviation management

ELECTIVE COURSE: International Tourism Course code: 23C4T5

COURSE LEARNING OUTCOMES:

CO1: To acquire the knowledge of tourism resources of India.

CO2: To enhance the knowledge of the tourism resources of North America and South America.

CO3: To enhance the knowledge of the tourism resources of Africa, the Middle East

CO4: To enhance the knowledge of the tourism resources of Europe

CO5: To enhance the knowledge of the tourism resources of Asia and Australia

ELECTIVE COURSE: Tourism Planning & Development Course code: 23C4T6

Course Outcomes:

CO1: To acquire the theoretical background of tourism planning, and destination development.

CO2: To enhance the concepts related to institutional support in tourism destination image development.

CO3: To acquire knowledge of tourism destination promotion and publicity

CO4: To enhance the concepts related to institutional support, PPP, National, WTO, rural, and environmental management.

CO5: To acquire the knowledge of the concept of sustainable tourism planning and development

ELECTIVE COURSE: Meeting, Incentive, Conference &Exposition Tourism

Course code: 23C4T7

Course Outcomes:

CO1: To acquire the knowledge of event management and its contribution to the tourism sector

CO2: To enhance the knowledge of event planning

CO3: To acquire the theoretical background of conference and conventions requirements and functionalities

CO4: To acquire the theoretical background of trade show and exhibition requirements and functionalities

CO5: To acquire the knowledge of incentives, and competencies to market and promote MICE tourism

SBRR Mahajana First Grade College (Autonomous), PG Wing

PoojaBhagavat Memorial Mahajana Education Centre

KRS Road, Metagalli, Mysuru-570016.

DEPARTMENT OF MCA

2023-2024

MOTTO

Enter to Learn Depart to Serve

VISION

Build a Strong Research and Teaching Environment that Responds Swiftly to theChallenges of the 21st Century.

MISSION

1. To provide the highest quality education in Computer Science;
2. To perform research that advances the state-of-the-art in Computer Science;
3. To produce post graduates who are knowledgeable, articulate, principled, innovative, confident, and able to think critically;
4. To be engaged in local, State, and National issues to the benefit of both publicand the private sector; and
5. To maintain a diverse college community.

Programme Outcomes–M.C.A.

PO1: Useemergingtools,techniquesandskillsnecessaryforcomputingintherealworld.

PO 2: Identify, formulate and solve complex computing problems to achieve substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domains.

PO 3: Analyze problems, suggest appropriate solutions and justify propositions for effective decision making in the professional field.

PO 4: Develop strong critical thinking skills to assess why certain solutions might not work and to save time in coming up with the right approach in the field of computing.

PO5: Create, selectandapplyappropriatetechniquesandlatestInformationTechnology tools to forecast an outcome by utilizing data that is available.

PO 6: Understand and assess societal, environmental, health, safety,legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

PO7: Develop and imbibe the principles of ethics and values in profession.

PO8: Communicate effectively and efficiently as an individual, and as a member, or leader to present the technical knowledge in multi-disciplinary settings.

PO 9: Study and review literature, reports prepare documentation and make inferences to design better systems.

PO10: Recognize and realize the need for, and develop an ability to engage in lifelong learning.

SBRR Mahajana First Grade College (Autonomous), PG Wing

Pooja Bhagavat Memorial Mahajana Education Centre

KRS Road, Metagalli, Mysuru-570016

Master of Computer Application

Programme Structure &Syllabus

W.e.f. 2023-2024

List of Hard Core Courses

Sl.No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Mathematical Foundations for Computer Applications	4	0	0	4	23BH01
2	Advanced Computer Networks	3	1	0	4	23BH02
3	Data Structures and Algorithms	3	0	1	4	23BH03
4	Operating System	3	1	0	4	23BH04
5	Software Engineering	3	1	0	4	23BH05
6	Object Oriented Programming with Java	3	0	1	4	23BH06
7	Python Programming	3	0	1	4	23BH07
8	Web Technologies	2	1	1	4	23BH08
9	Dissertation Work	0	2	10	12	23BH09

List of SoftCore Courses

Sl.No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Data Communication and Networks	3	1	0	4	23BS01
2	Advanced Database Management System	3	0	1	4	23BS02
3	Cloud Computing	4	0	0	4	23BS03
4	System Analysis and Design	3	1	0	4	23BS04
5	Cryptography and Network Security	3	1	0	4	23BS05
6	Theory of Languages and Automata	3	0	1	4	23BS06
7	Probability and Statistics	3	1	0	4	23BS07
8	Fundamentals of Internet of Things	3	1	0	4	23BS08
9	Mobile Application Development with Android	3	0	1	4	23BS09
10	Linux Programming	3	0	1	4	23BS10
11	Information Retrieval	3	0	1	4	23BS11
12	BigData Analytics	3	0	1	4	23BS12
13	Machine Learning using Python	3	0	1	4	23BS13
14	Advanced Java	3	0	1	4	23BS14
15	Management Information Systems	3	1	0	4	23BS15
16	Business Intelligence	3	1	0	4	23BS16
17	Entrepreneurship Development	3	1	0	4	23BS17
18	Communication Skills	3	1	0	4	23BS18
19	Professional Ethics and Human Values	3	1	0	4	23BS19
20	Cyber Security	3	1	0	4	23BS20
21	Simulation and Modeling	3	0	1	4	23BS21
22	Artificial Intelligence	3	1	0	4	23BS22

23	Research Methodology	3	1	0	4	23BS23
24	NPTEL MOOC COURSE(min.08 weeks)	0	0	0	4	23BS24

List of Open Elective Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	World Wide Web	3	1	0	4	23BE01
2	E-Commerce	3	1	0	4	23BE02
3	Office Automation	3	1	0	4	23BE03

HC MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATION 4:0:0

Outcomes:

• Develop an ability to implement various techniques of mathematical logic.

• Capability to apply the concepts of set theory.

• Ability to enhance the knowledge of algebraic structures towards computer applications.

• Ability to correlate the concepts of graph theory in computer applications.

HC ADVANCED COMPUTER NETWORKS 3:1:0

Outcomes:

• To employ the mechanism of Reference models and TCP/IP.

• To understand the role of Transport Layer in computer networks.

• Employ the techniques of TCP/IP.

• Comprehend the internal working mechanism of IP Security.

HC **DATA STRUCTURES AND ALGORITHMS** 3:0:1

Outcomes:

• Analyze algorithms and algorithm correctness.

• Summarize searching and sorting techniques.

• Describe stack, queue, and linked list operations.

• Solve problems by writing algorithms using fundamental data structures.

HC **OPERATING SYSTEM** 3:1:0

Outcomes:

• Understand the usage of the operating system components and its services.

• Employ the concepts of process management.

• Employ the concepts of memory management.

• Apply the file handling concepts in OS perspective.

HC **SOFTWARE ENGINEERING** 3:1:0

Outcomes:

• Gain an understanding to work in one or more significant application domains.

• Develop an ability to work as an individual and as part of a multidisciplinary team to develop and deliver quality software.

• Demonstrate an understanding of and apply the current theories, models, and techniques that provide a basis for the software lifecycle.

• Demonstrate an ability to ensure Software Quality Assurance.

HC **OBJECT ORIENTED PROGRAMMING WITH JAVA** 3:0:1

Outcomes:

• Use the syntax and semantics of the Java programming language and basic concepts of OOP.

• Apply the class fundamentals, arrays, inheritance, and polymorphism to develop reusable programs.

• Apply the concepts of packages, interfaces, and exception handling to develop efficient and error-free codes.

• Build applications using the concepts of multithreading and files.

HC **PYTHON PROGRAMMING** 3:0:1

Outcomes:

• Develop algorithmic solutions to simple computational problems.

• Read, write, and execute simple Python programs.

• Structure simple Python programs for solving problems.

• Decompose a Python program into functions.

HC **WEB TECHNOLOGIES** 2:1:1

Outcomes:

• Develop an ability to implement HTML5 pages using fundamental tags.

• Able to develop stylesheets using CSS for a given problem.

• Able to extend JavaScript to validate a form with an event handler for a given problem.

• Able to develop websites using web frameworks and content management systems.

HC **DISSERTATION WORK** 0:2:10

Outcomes:

• Develop basic algorithm steps as a solution to a real-life problem.

• Implement algorithms using the latest tools that contribute to the software solution of the project using different tools.

• Analyze, interpret, test, and validate experimental results.

• Develop research/technical reports with enhanced writing/communication skills following ethical practices.

SC **DATA COMMUNICATION AND NETWORKS** 3:1:0

Outcomes:

• Understand and implement various types of transmissions in wired and wireless

communications.

• Study and develop the aspects of communication channels of the Data Link Layer.

• Understand, design, and apply various routing protocols of the Networks Layer.

• Design applications using the protocols of the Transport and Application Layer.

SC ADVANCED DATABASE MANAGEMENT SYSTEM 3:0:1

Outcomes:

• Determine the basic concepts, E-R Mapping, and SQL basic commands.

• Demonstrate the techniques of SQL, FD, and Normalization.

• Develop Indexing, ACID, and Transaction.

• Describe NoSQL database and PostgreSQL.

SC CLOUD COMPUTING 4:0:0

Outcomes:

• Demonstrate the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications.

• Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, and private cloud.

• Identify the cloud services for individuals.

• Acquire the knowledge on the core issues of cloud computing such as security, privacy, and interoperability.

SC SYSTEM ANALYSIS AND DESIGN 3:1:0

Outcomes:

• Gather data for analysis and specify the requirements of a system.

• Design system components and environments.

• Build general and detailed models that assist programmers in implementing a system.

• Design a user interface for data input and output, as well as controls to protect the system and its data.

SC **CRYPTOGRAPHY AND NETWORK SECURITY** 3:1:0

Outcomes:

• Implement the principles and practices of cryptographic techniques.

• Build simple cryptosystems by applying encryption algorithms.

• Comprehend secure identity management (authentication), message authentication, and digital signature techniques.

• Employ the authentication protocol and web security methods.

SC **THEORY OF LANGUAGES AND AUTOMATA** 3:0:1

Outcomes:

• Acquire a fundamental understanding of the core concepts in automata theory and formal languages.

• Design grammars and automata (recognizers) for different language classes.

• Identify formal language classes and prove language membership properties.

• Prove and disprove theorems establishing key properties of formal languages and automata.

SC **PROBABILITY AND STATISTICS** 3:1:0

Outcomes:

• Apply axioms and theorems to describe events and compute probabilities. Also, identify the types of random variables and calculate relevant probabilities.

• Analyze the different techniques in continuous probability distribution.

• Describe an appropriate statistical model for the given data and compute population parameters using appropriate estimators.

• Describe the tests of hypotheses, types of errors, test for significance, regression, and curve fitting.

SC **FUNDAMENTALS OF INTERNET OF THINGS** 3:1:0

Outcomes:

• Interpret the impact of IoT networks in new architectural models.

• Compare and contrast the deployment of smart objects and technologies to connect them as a network.
• Elaborate on the need for IoT access technologies.
• Identify the application of IoT in smart and connected cities and public safety.

SC MOBILE APPLICATION DEVELOPMENT WITH ANDROID 3:0:1

Outcomes:

• Build sample Android applications.
• Develop user interfaces for Android applications.
• Develop Android applications to share data between different applications.
• Deploy Android applications.

SC LINUX PROGRAMMING 3:0:1

Outcomes:

• Work confidently in the Linux environment with an understanding of the architecture and shell programming.
• Work with sed/awk and gain the ability to write programs using file and directory-related system calls.
• Handle processes using process-related system calls.
• Write communicating programs using different IPC mechanisms and Berkeley sockets.

SC INFORMATION RETRIEVAL 3:0:1

Outcomes:

• Locate relevant information in large collections of data.
• Impart features of retrieval systems for text data.
• Analyze the performance of retrieval systems using test collections.
• Implement different clustering algorithms.

SC BIG DATA ANALYTICS 3:0:1

Outcomes:

• Apply the Data Analytics Life Cycle to real-life cases.

• Process data with Hadoop.

• Apply the necessary techniques for data analytics.

• Demonstrate data analysis using R.

SC **MACHINE LEARNING USING PYTHON** 3:0:1

Outcomes:

• Identify the need for machine learning using Python, appropriate data frames, and its operations.

• Build and validate linear regression models.

• Understand different classification techniques and build classification models.

• Use unsupervised learning techniques to cluster data and apply the Scikit library for machine learning.

SC **ADVANCED JAVA** 3:0:1

Outcomes:

• Develop component-based Java software using JavaBeans.

• Develop server-side programs in the form of servlets.

• Implement Entity JavaBeans in stateless and stateful environments.

• Employ the concepts of EJB and JAR files.

SC **MANAGEMENT INFORMATION SYSTEMS** 3:1:0

Outcomes:

• Explain the role of IS in business.

• Explain different enterprise management and functional management systems in business.

• Identify the applications of e-commerce and issues of e-commerce.

• Understand decision support systems.

SC **BUSINESS INTELLIGENCE** 3:1:0

Outcomes:

• Acquire knowledge of business intelligence methodologies.

• Comprehend the user models of business intelligence in real-time scenarios.

• Employ the lifecycle strategies for various BI capabilities.

• Compare and contrast various BI implementations in major companies.

SC **ENTREPRENEURSHIP DEVELOPMENT** 3:1:0

Outcomes:

• Analyze the history and need for entrepreneurship.

• Employ the functions of women and rural entrepreneurship.

• Inculcate the behaviors of entrepreneurs.

• Comprehend the need and importance of management.

SC **COMMUNICATION SKILLS** 3:1:0

Outcomes:

• Understand and apply knowledge of human communication and language processes across various contexts from multiple perspectives.

• Understand and evaluate key theoretical approaches used in the interdisciplinary field of communication.

• Find, use, and evaluate primary academic writing associated with the communication discipline.

• Communicate effectively orally and in writing.

SC **PROFESSIONAL ETHICS AND HUMAN VALUES** 3:1:0

Outcomes:

• Implement the aspects of human values.

• Interpret the ethics of engineering and its associated responsibilities.

• Employ the code of ethics in their profession.

• Display an awareness of global issues in ethics.

SC CYBER SECURITY 3:1:0

Outcomes:

• Understand the concept of cybercrime and offenses.

• Analyze the problems relating to cyber-crimes using mobile phones.

• Demonstrate the various attacks of cyber-crime.

• Understand and apply computer forensics to problem areas.

SC SIMULATION AND MODELING 3:0:1

Outcomes:

• Analyze the different components of a system and identify the applications of simulation.

• Implement different algorithms associated with the generation of random numbers and test for randomness.

• Implement different methods of generating random variants.

• Analyze different techniques in verification and validation of simulation models and output analysis for different types of simulations.

SC ARTIFICIAL INTELLIGENCE 3:1:0

Outcomes:

• Express the modern view of AI and its foundations.

• Illustrate search strategies with algorithms and problems.

• Implement propositional logic and apply inference rules.

• Apply suitable techniques for NLP and game playing.

SC RESEARCH METHODOLOGY 3:1:0

Outcomes:

• Identify suitable research methods and articulate the research steps in a proper way.

• Explain the functions of the literature review in research and carry out a literature search.

• Explain various research designs, sampling designs, and measurement and scaling

techniques.

• Perform data collection from various sources and segregate the primary and secondary data.

OE WORLD WIDE WEB 3:1:0

Outcomes:

• Understand the working scheme of the Internet and the World Wide Web.

• Evaluate various protocols of the Internet.

• Comprehend and demonstrate the application of Hypertext Mark-up Language (HTML).

• Apply various security tools and understand the need for security measures.

OE E-COMMERCE 3:1:0

Outcomes:

• Analyze the impact of E-commerce on business models and strategies.

• Describe Internet trading relationships, including Business-to-Consumer, Business-to-Business, and intra-organizational structures.

• Assess electronic payment systems and their security.

• Recognize and discuss global E-commerce issues.

OE OFFICE AUTOMATION 3:1:0

Outcomes:

• Understand the basics of computer hardware and software.

• Prepare documents of different types.

• Develop and use spreadsheets for tabulating and analyzing productivity.

• Prepare presentations.

SBRR MAHAJANA FIRST GRADE COLLEGE [AUTONOMOUS]

(Accredited by NAAC with 'A' grade) POST GRADUATION WING

Pooja Bhagavat Memorial Mahajana Education Centre Affiliated to the University of Mysore

KRS Road, Metagalli, Mysuru-570016

DEPARTMENT OF STUDIES IN COMMERCE

COURSE OUTCOMES AND PROGRAMME OUTCOMES

2023-24

CHOICE-BASED CREDIT SYSTEM

(TO BE IMPLEMENTED FROM THE ACADEMIC YEAR 2023-2024)

MASTER OF COMMERCE (M.Com)

Program Outcomes

PO1. Domain knowledge: Enhance the in-depth knowledge of various fields of business and commerce such as Accounting, International Accounting, Financial derivatives, Business Environment, international business, Research Methodology, and Tax planning, etc.,

PO2. Communication Skills: Build strong communication skills and interpersonal skills among the students.

PO3. Critical thinking: Encourage students to analyze case studies and their outcomes with the help of theoretical framework.

PO4. Problem solving: Students are encouraged to apply the knowledge gained through the programme to solve issues and problems that arise in the respective domains.

PO5. Analytical reasoning: Students will develop the reasoning abilities through analysis made by using various analysis tools to support their ideas and projects.

PO6. Research skills: Inculcate the knowledge of identifying, formulating, review of literature to analyse the complex business problems.

PO7. Cooperation/Team work: Build team spirit among the students to face real-life situations in their respective career domains.

PO8. Scientific reasoning: Encourage students to develop the ability to draw inferences and conclusions based on quantitative and qualitative data and analysis.

PO9. Reflective thinking: Interact with industry personnel, alumni and gain knowledge from the experiences shared by them.

PO10. Information/digital literacy: Inculcate the knowledge of Application of information technology in the field of Commerce.

PO11. Self-directed learning: Inculcate the ability to take-up projects, identify and compile resources required for the project and follow through for completion

PO12. Multicultural competence: Interact with assorted groups engaged in serving the society in the multicultural background.

PO13. Moral and ethical awareness/reasoning: Educate the students on business ethics, values and responsibility of business towards various stakeholders.

PO14. Leadership readiness/qualities: Inculcate the ability to form team and motivate and inspire the team members towards achieving the set goals.

PO15. Lifelong learning: Imparting career enhancement skills by providing training in various competitive exams.

I SEMESTER

ADVANCED ACCOUNTING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes:

CO1: Provides detailed insight into various Indian accounting standards

CO2: Stages and process of standards settings by ICAI in India along with compliance and applicability of accounting standards in India.

CO3: Understand the difference between Accounting Standard, IFRS, IASB and FASB and also gain knowledge on Convergence of Indian Accounting Standards with IFRS

CO4: Understand financial disclosures and preparation of accounting reporting.

HC02: FINANCIAL MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes:

CO1: Know the relativity of capital investment decisions and financial Policies to business valuations.

CO2: Application of different methods of cost of capital to ascertain the overall cost of capital of the firm,

CO3: Application of financial leverage to form long-term financial policies for business.

CO4: Ascertain common investment criteria and project cash flows with associated corporate project evaluation.

SC 03: MARKETING MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 Per Week

Course Outcomes:

CO: Learn the Importance of how Demographic, Cultural and Institutional factors Shape the Global Marketing Environment

CO2:Depict Various Methods through which a firm can promote Its products in markets and be able to make All the necessary decisions needed for promoting the product in markets.

CO3: Develop Self-Leadership Strategies to Enhance Personal and Professional Effectiveness.

CO4 Figure Out the Implications of Current Trends in Social Media Marketing and Emerging Marketing Trends.

CO5:Portray decisions related to designing channel as well as physical distribution systems for making available the products in the markets.

HC 04: HUMAN RESOURCE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcome:

CO1: Understanding of the concept, functions and process of human Resource management.

CO2: Provide practical knowledge on preparation of job description and job specification.

CO3: Enhance the practical knowledge on human resource planning in an organization.

CO4: Design and formulate various HRM processes such as Recruitment, Selection, Training, Development, Performance appraisals.

CO5: Understanding of compensation and reward system adopted in an organization.

CO6: Understanding the adoption of E-HRM practices in an organization.

SC01: INTERNATIONAL BUSINESS ENVIRONMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes:

CO1. Learn the dynamics of the international business environment from a competitive and economic perspective.

CO2. Depict the various provisions relating to international trade and investment theories, and Transnational Corporations and its recent trends in TNCs.

CO3. Know about the international investments and recent trends in FDI Flows.

CO4. Outline the International business ethics and International Management.

CO5. Portray the approaches towards social responsibility and institutionalizing social responsibility.

SC 02: STATISTICS FOR BUSINESS DECISIONS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO 1 : Development of logical reasoning ability in students.

CO 2 : Knowledge about the applicability of various parametric and non- parametric tests for analysis of data.

CO 3 : Ability to use SPSS to solve statistical problems.

CO 4 : Ability to make decisions under uncertain business situations through analysis.

Course Articulation Matrix

SC03: ADVANCED AUDITING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Knowing the Indian Auditing Standards and Audit Procedures.

CO-2: Learning the auditing practice of different sectors.

CO-3: Preparation of audit report as per CARO 2016.

CO-4: Practice of audit through online.

II SEMESTER

HC05: ORGANISATIONAL BEHAVIOUR

Total Credits:4 Credit Pattern:3:1:0 No of hours:5 per week

Course Outcomes:

CO1. Comprehend the conceptual frame work of management and Organizational behavior

CO2. Understanding the complexities associated with management of individual behavior and group behavior in the organization.

CO3. Application of various motivational theories in anchoring the behaviour of employees in an organization

CO4. Apply creative, critical and reflective thinking to address organizational opportunities and challenges.

HC06: CORPORATE GOVERNANCE

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 Per Week

COURSE OUTCOME:

CO1: Know the Conceptual framework of Corporate Governance around the world and in India,

CO2: Enhancing the Knowledge on Ethics in Business and the Code of Conduct practiced in various Corporations.

CO3: Learn the efforts of governments and various committees in enacting good governance systems in Indian Corporations,

CO4: Realize the roles and responsibilities of CEO, CFO, Company Secretary and other key managerial personnel

CO5: Identify and understand the various Corporate Social Responsibility activities taken up by the Indian corporate sector.

HC07: INTERNATIONAL BUSINESS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcome:

CO1: Identify the key aspects of international trade and calculate its potential gains to participating nations.

CO2: Recognize the characteristics of foreign exchange markets

CO3: Identify the different countries currency regimes around the world.

CO4: Evaluate cross-border investment opportunities, and describe a multinational firm's decision-making process

SC 04: CAPITAL MARKET INSTRUMENTS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

CO-1: learning conceptual and practical knowledge on Capital market and its operations in India

CO-2: Valuation of financial securities like bond, debenture and stocks.

CO-3: Mechanism and application of forwards/futures, options, financial swaps.

CO-4: Learn online trading mechanism of derivatives instruments.

SC 05: SERVICES MARKETING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcome:

CO1: Learn the Concept of Services and intangible products

CO2: Comprehend the characteristics of service industry

CO3: Visualise the significance of service innovation and design

CO4: Employ various modes of service delivery in service organizations

SC 06: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Know the various investment avenues available for investment and assess the risk and return associated with investments alternatives.

CO-2: Application of fundamental and technical analysis for security valuation

CO-3: Enhance the knowledge in various theories of portfolio analysis, construction and performance evaluation of portfolios

CO-4: Acquire the practical knowledge on online trading of different financial securities.

SC 07: COMPUTER APPLICATIONS IN COMMERCE

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes:

CO1: The application of accounting software for preparation of financial statements by using tally ERP.9.

CO2: Application of capital budgeting techniques such as NPV, IRR, PV etc., by using MS-Excel.

CO3: Analyze the research data by using SPSS software.

CO4: Filing of income tax return Forms and TDS Return and E-filing of indirect taxes return and filing of online application for PAN and TAN.

CO5: Preparation of financial report by using XBRL.

OE01: STOCK MARKETS AND INVESTEMENT DECISIONS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes:

CO1: Enhancing the knowledge on theoretical and practical concepts of Indian stock markets and Stock Market Instruments

CO2: Understanding the Trading mechanism in stock market

CO3: Analyze the Stock price movement using BSE-SENSEX and NSE-NIFTY as benchmark indices

CO4: Learning online trading mechanism

OE 2 : MANAGEMENT OF ENTERPRISES

Total Credits:4 Credit Pattern: 3:1:0No of hours: 5 per week

Course Outcomes:

CO 1: Understanding the distinct entrepreneurial traits.

CO 2: Know the parameters to assess opportunities and constraints for newbusiness ideas and the role of Central and State Government institutions in thedevelopment of Entrepreneurship in India

CO 3: Understand the systematic process to select and screen a b.usiness idea and write a business plan.

CO 4: Design strategies for successful implementation of ideas.

III SEMESTER

HC 08: BUSINESS RESEARCH METHODS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcome:

CO1: Identify the Research problems in the area of Business and Commerce

CO 2: Write a literature review that synthesizes and evaluates literature in a specific topic area to justify a research question

CO 3: Apply appropriate research design and methods to address a specific research question and acknowledge the ethical implications of the research

CO 4: Develop a research proposal/research paper on the basis their study.

CO 5: Present and defend a research proposal/ research paper.

HC 09: OPERATIONS RESEARCH

Total Credits:4 Credit Pattern: 4:1:0 No of hours: 5 per week

Course Outcomes:

CO 1: Application of Linear Programming in cost minimization and profit maximization

CO 2: Conceptual knowledge and practical applications on Transportation and Assignments

CO 3: Understand the usage of game theory and Simulation for Solving Business Problems

CO4: Understand the applicability of replacement model in cost analysis

SC08: ENTREPRENEURSHIP DEVELOPMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

CO 1: Understanding the distinct entrepreneurial traits.

CO 2: Know the parameters to assess opportunities and constraints for new business ideas.

CO 3: Understand the systematic process to select and screen a business idea.

CO 4: Design strategies for successful implementation of ideas.

CO 5: Write a business plan.

CO 6: know the role of Central and State Government institutions in the development of Entrepreneurship in India.

SC 09: INTERNATIONAL HUMAN RESOURCE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

CO 1: Demonstrate an understanding of key terms, theories/concepts and practices within the field of IHRM

CO 2: Develop and ability to undertake qualitative and quantitative research and apply this knowledge in the context of an independently constructed work

CO 3: Identify and appreciate the significance of ethical issues in HR practices and the management of people in the workplace.

CO 4: Critically appraise the impact of cultural and contextual factors in shaping human resource practices in MNCs

SC 10: INTERNATIONAL FINANCIAL MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per hour

Course Outcomes

CO-1: Enhance the knowledge on international financial environment. CO-2: Understanding of Balance of Payment in Indian Scenario

CO-3: Practical approach on determination of foreign exchange rates

CO-4: Application of capital budgeting, cost of capital and working capital management in international transactions.

SC 11: PROJECT MANAGEMENT

Total Credits: 4 per week Credit Pattern: 3:1:0 No of hours: 5

Course Outcomes:

CO-1: Students would learn project planning & analysis and implementation.

CO-2: Describe the method of generating project ideas and screening them

CO-3: Students would learn to prepare a detailed project plan.

CO-4: To understand various financial and technical aspects regarding project management.

SC 12: ELECTIVE GROUP A-BUSINESS TAXATION PAPER1: GOODS AND SERVICES TAX AND CUSTOMS DUTY

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Overview of Good and Services Tax system and structure in India.

CO-2: Practical application of levy, collection, valuation and ITC under GST

CO-3: Filing of online GST return

CO-4: Understanding the concept of Custom's duty, its valuation and duty drawback in India

SC 13 : ELECTIVE GROUP B – FINANCIAL ACCOUNTING PAPER-1: ACCOUNTING FOR SPECIAL TRANSACTIONS

Total Credits:4 Credit Pattern:3:1:0 No of hours:5

Course Outcomes:

CO 1: Know the measurement and disclosure of Interim Financial Reporting and Segment Reporting.

CO 2: Understand the accounting concept relating to levy of income tax CO 3: Prepare accounting for Goods and Services Tax.

CO 4: Know and understand fair value and its applications in Accounting.

SC 14 - ELECTIVE GROUP C: FINANCIAL MANAGEMENT PAPER-1: CORPORATE RESTRUCTURING

Total Credits: 4 per week Credit Pattern: 3:1:0 No of hours: 5

Course Outcomes:

CO-1: Explain the concept of corporate restructuring and major forms of corporate restructuring.

CO-2: Describe the process of value creation under different forms of Merger and Acquisition

CO-3: Evaluate the operational & financial performance of Merger and Acquisition

CO-4: Various legal aspects regarding mergers/amalgamations and acquisitions/takeovers

SC15 - ELECTIVE GROUP D: HUMANRESOURCE MANAGEMENT PAPER1: STRATEGIC MANAGEMENT OF HUMAN RESOURCES

TotalCredits:4 Credit Pattern: 3:1:0No of hours:5

Course Outcomes:

CO 1: Understand and discuss concepts of SHRM.

CO 2: Application of SHRM techniques in various organizational situations

CO 3: Evaluate the strengths and weaknesses of SHRM practices in organizations.

CO 4: Identify and assess ethical, environmental and/or sustainability considerations in SHRM decision-making and practice.

CO 5: Enlighten top executives on linkages between global and domestic HRM

SC16 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING PAPER 1: MARGINAL COSTING AND DECISION MAKING

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1 : Application of tools and techniques of marginal costing in managerial decision making

CO-2 : Practical knowledge on overhead analysis and its appropriate Applicability

CO-3 : Enhance knowledge on application of Costing standards in Cost Audits.

CO-4: Preparation of Break-Even chart for taking managerial decisions.

IV SEMESTER

HC 10: INTERNATIONAL ACCOUNTING

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5

Course Outcome:

CO1: Familiarize and understand the International Financial Reporting Standards (IAS or IFRS) and its application.

CO2: Application of different types of financial exposures in IFRS.

CO3: Enhance the knowledge on the Transfer Pricing policy in international business CO4: Application of XBRL software in financial reporting.

HC 11: STRATEGIC MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcome:

CO1: Enlightening the top echelons on the linkages between vision, mission and strategies

CO2: Develop strategies keeping core competencies acquired over the years.

CO3:Develop competitive building blocks and design approaches to increase Competitive advantage

CO4: Enlighten all stake holders on the linkages between strategy formulation, implementation and evaluation

CO5: Identify endogenous and exogenous forces influencing strategic decision making

SC 17: FOREIGN EXCHANGE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcomes

CO-1: Acquisition of conceptual knowledge on international monetary system CO-2: Overview on FOREX management and FOREX reserve

CO-3: Application of hedging against foreign exchange exposure CO-4: Forecasting foreign exchange rates using various techniques.

SC 19 - ELECTIVE GROUP A: BUSINESS TAXATION PAPER 2: CORPORATE TAX LAW AND PLANNING

TotalCredits:4 Credit Pattern: 3:1:0 No of hours:5 per wee

Course Outcomes

CO-1: Knowing overview of corporate tax system in India

CO-2: Exposure on practical approaches towards taxable income of the company

CO-3: Application of Income tax rules in managerial decisions such as, make or buy, dividend decisions, etc.

CO-4: Online filing of returns for corporate assessed.

SC 20: ELECTIVE GROUP B – FINANCIAL ACCOUNTING PAPER 2: CONTEMPORARY AREAS OF FINANCIAL ACCOUNTING

Total Credits: 4 per week Credit Pattern: 3:1:0 No of hours: 5

Course Outcomes:

C01- Provide Detailed insight of Human resource Accounting.

C02 -Understand concept of Accounting for Bonus shares, right shares and dividend.

C03-Application of different methods of Inflation accounting.

C04-Understand the concept of environmental accounting.

SC 21 -ELECTIVE GROUP C: FINANCIAL MANAGEMENT PAPER 2: FINANCIAL DERIVATIVES

TotalCredits:4 Credit Pattern: 3:1:0No of hours:5

Course Outcomes:

CO1 Understand the various financial derivative instruments such as options, futures, swaps and other derivative securities.

CO2 Application of derivative instruments in managing the risk of investing and hedging activity at the individual and the corporate level.

CO3 Comprehend the economic environment in which derivative instruments operate.

CO4 Employ theoretical valuation methods to pricing of financial derivative instruments by using different valuation models

SC 22 -ELECTIVE GROUP D: HUMAN RESOURCE MANAGEMENT PAPER 2: INDUSTRIAL RELATIONS & COLLECTIVE BARGAINING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

C01- To help students acquire solid theoretical, practical and ethical perspective on various aspects of IR.

C02-To make the student aware of the present state of IR in India.

C03-To Understand the various processes and procedures of handling Employee Relations.

C04-To be acquainted with the concepts, principles and issues connected with Trade Unions, Collective Bargaining and Grievance redressal

SC23 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING PAPER 2: COST MANAGEMENT

Total Credits:4 Credit Pattern:3:1:0 No of hours:5 per week

Course Outcomes

At the end of the course, the students will be able to know:

CO-1: Application of tools and techniques in activity-based cost for managerial decision CO-2: Practical approaches on cost volume profit analysis

CO-3; Theoretical and practical approaches on various Pricing strategies

CO-4: Application of operation research and statistical tools in cost management.

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DEPARTMENT OF SOCIAL WORK

Programme Outcomes

1. The Social Work trainees shall apply the foundational knowledge, skills, values, and ethics of social work practice in the assessment and treatment of individuals, families, groups, organizations, and communities and be able to pursue a career in social work practice.
2. Demonstrate an understanding and appreciation for human diversity, engage in non-discriminatory, culturally sensitive practice, and seek social and economic justice for clients, providing services to those in need.
3. Recognize themselves as Professional Social Workers.
4. Facilitate interdisciplinary collaboration for better understanding of human problems, services, and issues related to human development.
5. Develop a professional identity as a social worker by applying professional values and ethics to social work practice.
6. Link theory with practice in every sphere of human service interventions.
7. Develop requisite knowledge, skills, and values in working with people.
8. Establish interactions between social scientists, activists, policymakers, and planners.
9. Promote a sense of responsibility and commitment to work with different sections of society, particularly the vulnerable.
10. Promote opportunities for personal growth and create awareness.
11. Develop creative thinking and the ability to apply theoretical knowledge in social work practice.
12. Maximize the strengths of the client context to design and promote effective programs.

Course Outcomes (COs) for Honor's Level Odd Semester (I Semester)

Social Work - History and Ideologies

- CO 1: Understand the history and evolution of the social work profession, both in India and the West.
- CO 2: Develop insights into the origin and development of ideologies and approaches to social change.
- CO 3: Develop skills to understand contemporary reality in its historical context.

Society and Dynamics of Human Behaviour

- CO 1: Acquaint themselves with the basic concepts of Sociology such as society, community, culture, social change, and social stratification.
- CO 2: Understand the basic social institutions like family, marriage, and kinship.
- CO 3: Explain social change and the factors affecting social change, realizing the importance of cultural lag.
- CO 4: Understand psychological concepts and their relevance to social work.

Work with Individuals and Families

- CO 1: Understand the individual, family, and their problems, and the social contextual factors affecting them.
- CO 2: Understand Social Casework as a method of social work practice.
- CO 3: Understand the application of case work in diverse settings.

Work with Groups

- CO 1: Understand the nature and types of groups.
- CO 2: Understand Social Group Work as a method of social work practice.

- CO 3: Understand the basic concepts, tools, techniques, processes, and skills of working with groups.

Work with Communities

- CO 1: Understand the fundamental concepts and components of community, community organization, and social action.
- CO 2: Understand the models of community organization and social action.
- CO 3: Understand the relationship between community organization and social action with other methods of social work.
- CO 4: Understand various social movements in India.

Social Work Practicum – I

- CO 1: Work in agencies working in different areas of social work practice.
- CO 2: Develop work plans in consultation with agency supervisors.
- CO 3: Develop capacity for observation and analysis of social realities.
- CO 4: Practice the methods of working with individuals and groups.
- CO 5: Develop an understanding of the needs, problems, and programs for different target groups.

Honor's Level Even Semester (II Semester)

Management of Developmental and Welfare Services

- CO 1: Understand the administration of welfare organizations and civil society organizations/non-government organizations (NGOs).
- CO 2: Understand the scope for social work in welfare organizations and NGOs.
- CO 3: Understand the scope for social work in welfare organizations and NGOs.
- CO 4: Develop knowledge about the registration procedures for organizations.

Social Work Research and Statistics

- CO 1: Gain an understanding of the nature and relevance of social science research and its application in the study of social phenomena.
- CO 2: Learn the steps and process of formulating research designs and carry them out.
- CO 3: Learn the method of conducting a review of literature.
- CO 4: Develop familiarity with qualitative and quantitative research methods.
- CO 5: Learn how to prepare tools for data collection.
- CO 6: Learn the process of data collection, organization, presentation, analysis, and report writing.

SOCIAL WORK PRACTICUM – II

Course Outcomes (COs):

- **CO 1:** Provides an opportunity to experience rural life, analyze rural dynamics, and observe the functioning of local self-government and voluntary organisations.
- **CO 2:** Aids peer participation in planning for activities for own group and those for local people.
- **CO 3:** Helps develop skills to carry out, evaluate, and report the experience.

SOCIAL WORK PRACTICUM – III

Course Outcomes (COs):

- **CO 1:** Develop work plan in consultation with agency supervisor.
- **CO 2:** Continue practicing the methods of working with individuals and groups.
- **CO 3:** Identify and utilize human, material and financial resources.
- **CO 4:** Develop process-oriented skills of working with individuals, families and groups with special reference to social support system.

COMMUNICATION AND COUNSELING

Course Outcomes (COs):

- **CO 1:** Provides an opportunity to experience rural life, analyze rural dynamics, and observe the functioning of local self-government and voluntary organizations.
- **CO 2:** Aids peer participation in planning for activities for own group and those for local people.
- **CO 3:** Helps develop skills to carry out, evaluate, and report the experience.

GANDHIAN APPROACH TO WELFARE AND DEVELOPMENT

Course Outcomes (COs):

- **CO 1:** Understand the applicability of Gandhian methods in the contemporary political, economic and social domains.
- **CO 2:** Perceive, understand and appreciate the socially relevant ideals of Gandhi.
- **CO 3:** Analyze the simple living, struggle for truth, and principle of nonviolence practiced and propagated by Mahatma Gandhi.

POPULATION AND ENVIRONMENT

Course Outcomes (COs):

- **CO 1:** Understand the concept of population.
- **CO 2:** Develop skills for planning and implementing Family Planning and welfare programmes.
- **CO 3:** Study the role of social workers in family welfare programmes and environmental change.

SOCIAL WORK PRACTICE WITH CHILDREN (OE)

Course Outcomes (COs):

- **CO 1:** Able to deliver services for children in an appropriate manner.
- **CO 2:** Students will be able to design, implement, and evaluate a variety of strategies to provide services for children.

SCIENCE OF CRIME, PENOLOGY, AND SOCIAL WORK PRACTICE (OE)

Course Outcomes (COs):

- **CO 1:** Understand major forms of crime.
- **CO 2:** Gain knowledge about major theories of crime.
- **CO 3:** Practice correctional Social Work in different institutional and non-institutional settings.
- **CO 4:** Understand provisions of various social legislations in India.

HUMAN RESOURCE MANAGEMENT (III Semester - Odd Semester)

Course Outcomes (COs):

- **CO 1:** Develop the necessary skill set for application of various HR issues.
- **CO 2:** Develop the understanding of the concept of human resource management and its relevance in organizations.
- **CO 3:** Analyze the strategic issues and strategies required to select and develop manpower resources.
- **CO 4:** Integrate the knowledge of HR concepts to make correct business decisions.

SOCIAL WORK PRACTICUM – IV

Course Outcomes (COs):

- **CO 1:** Initiate and participate in direct service delivery.
- **CO 2:** Work in sensitive areas like working with alcoholics, HIV/AIDS affected persons, adolescents for life skills development, youth for leadership development, and couples for marital relationship and enrichment work with the elderly.

- **CO 3:** Identify research areas in the community.

SOCIAL WORK WITH TRIBAL AND RURAL COMMUNITIES

Course Outcomes (COs):

- **CO 1:** Able to understand Tribal Communities.
- **CO 2:** Develop adequate skills to prepare and implement integrated development plans and projects for Tribal Communities.
- **CO 3:** Develop trainees as competent change agents in the field of tribal development.

ORGANIZATIONAL BEHAVIOUR AND ORGANIZATIONAL DEVELOPMENT

Course Outcomes (COs):

- **CO 1:** Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
- **CO 2:** Analyze the complexities associated with management of group behavior in the organization.
- **CO 3:** Demonstrate how organizational behavior can integrate in understanding the motivation (why) behind the behavior of people in the organization.

PREVENTIVE AND SOCIAL MEDICINE AND MEDICAL SOCIAL WORK

Course Outcomes (COs):

- **CO 1:** Able to understand the concept and dimensions of health.
- **CO 2:** Able to analyze issues related to the prevention, clinical features, and treatment of major communicable and non-communicable diseases.

- **CO 3:** Able to analyze the nature of medical social work services.
- **CO 4:** To gain understanding of healthcare services at different levels.

REHABILITATION AND AFTER CARE SERVICES

Course Outcomes (COs):

- **CO 1:** Articulate the principles of independence, inclusion, choice and self-determination, empowerment, access, and respect for individual differences.
- **CO 2:** Apply the principles of disability-related legislation, including the rights of people with disabilities, to the practice of rehabilitation counseling.
- **CO 3:** Develop understanding of different rehabilitation settings and therapeutic approaches to the rehabilitation process.

SOCIAL POLICY, PLANNING AND DEVELOPMENT

Course Outcomes (COs):

- **CO 1:** Develop understanding of the concept of social policy and social planning.
- **CO 2:** Understand the concept and nature of Development and Human Development.
- **CO 3:** Understand the concept of social welfare and social welfare administration.
- **CO 4:** Acquire social work skills adapted to facilitate the process of rehabilitation, rights, and legal provisions for differently-abled people and assimilate the knowledge of social work practice in disability-specific client services.

LEGAL SYSTEM IN INDIA

Course Outcomes (COs):

- **CO 1:** Understand key concepts of deviance and crime.
- **CO 2:** Practice correctional social work in different institutional and non-institutional settings.
- **CO 3:** Understand provisions of various social legislations in India.

GERONTOLOGICAL SOCIAL WORK

Course Outcomes (COs):

- **CO 1:** Able to understand perspectives on aging.
- **CO 2:** Able to understand challenges and problems.
- **CO 3:** Able to demonstrate awareness in the National Policy on Older Persons.

MANAGEMENT OF NON-GOVERNMENTAL ORGANIZATIONS

Course Outcomes (COs):

- **CO 1:** Able to understand the role of NGOs in societal development.
- **CO 2:** Understand the procedures for registration of NGOs.
- **CO 3:** Provide managerial training and skills.
- **CO 4:** Enhance the knowledge of the fundamentals of accounting.

EMPLOYEE RELATIONS AND LEGISLATIONS

Course Outcomes (COs):

- **CO 1:** Know the development and the judicial setup of Labour Laws.
- **CO 2:** Describe the knowledge of Industrial Relations.
- **CO 3:** Learn the laws relating to Industrial Relations, Social Security, and Working Conditions, and also learn the enquiry procedure and industrial discipline.
- **CO 4:** Apply the Industrial Disputes Act for employees.

MENTAL HEALTH AND PSYCHIATRIC SOCIAL WORK

Course Outcomes (COs):

- **CO 1:** Able to understand psychological concepts and their relevance to Social Work.
- **CO 2:** Able to understand the basic concepts and processes in social psychology and their relevance to Social Work.

- **CO 3:** Able to understand determinants and processes of personality development.
- **CO 4:** Able to understand social attitudes and psycho-social behavior.

MAJOR PROJECT

Course Outcomes (COs):

- **CO 1:** Develop the ability to initiate and conduct research.
- **CO 2:** Develop research skills for identifying and selecting a research area and preparing a research proposal.
- **CO 3:** Develop skills in literature review and steps of research methodology.
- **CO 4:** Familiarized with the process of data analysis and report writing.
- **CO 5:** Understand ethical considerations in research.

SOCIAL WORK PRACTICUM – V

Course Outcomes (COs):

- **CO 1:** Shall initiate and participate in direct service delivery.
- **CO 2:** Work in areas like Human Resource Management, Psychiatric Social Work, and key areas.
- **CO 3:** Shall identify research areas in the community.

SOCIAL WORK PRACTICUM – VI: (BLOCK PLACEMENT)

Course Outcomes (COs):

- **CO 1:** Shall work in an organization continuously for 6 weeks and understand the workplace better.
- **CO 2:** Work in areas relevant to social work interventions.
- **CO 3:** Shall identify research areas in the community, Human Resource Management, or Psychiatric Social Work.

HUMAN RESOURCE DEVELOPMENT AND EMPLOYEE WELLNESS

Course Outcomes (COs):

- **CO 1:** Understand key functions in management as applied in practice.
- **CO 2:** Understand and analyze different trends in HRD that have influenced both Human Resource Development and Human Development.
- **CO 3:** Provide in-depth knowledge of the issues related to the trainee, the trainer organization, and the context of the training and learning process.
- **CO 4:** Provide inputs on assessment and evaluation of training programs essential to determine training effectiveness.

CASE STUDIES

Course Outcomes (COs):

- **CO 1:** Analyze the case using relevant theoretical concepts.
- **CO 2:** Offer learners an opportunity to think and act critically, reflecting on their process of thinking and action and its consequences.

DISASTER MANAGEMENT

Course Outcomes (COs):

- **CO 1:** Able to understand concepts, theories, and approaches to disaster management with specific reference to the Indian context.
- **CO 2:** Develop skills to analyze factors contributing to disaster.
- **CO 3:** Develop an understanding of the process of disaster management.
- **CO 4:** Develop an understanding of the social worker's role in the team for disaster management.

CORRECTIONAL ADMINISTRATION AND SERVICES

Course Outcomes (COs):

- **CO 1:** Recognize correctional institutions and non-institutional programs.
- **CO 2:** Gain an understanding of different services for juveniles, young, and adult offenders and the legal provisions and procedures for their assistance.
- **CO 3:** Identify structure, function, treatment, and facilities provided by the institutions.

Mahajana Education Society (R)

SBRR Mahajana First Grade College (Autonomous) Affiliated to University of Mysore,

Re-Accredited by NAAC with 'A' Grade, College with Potential for Excellence

Post Graduate Wing

Pooja Bhagavat Memorial Mahajana Education Centre

K.R.S. Road, Metagalli, Mysore-570 016, Karnataka

Master of Science in Chemistry (Choice Based Credit System)

Programme Objectives

1. To provide the latest subject matter both theory as well as practical in such a way to foster their core competency and discovery learning. A chemistry postgraduate as envisioned in this framework would be sufficiently competent in the field to understand further discipline specific studies as well as to begin domine related employment.
2. To mould a responsible citizen who is aware of most basic domain-independent knowledge including critical thinking and communication.
3. Enable the graduate to prepare for national as well as international competitive examinations, especially UGC-CSIR NET and UPSC civil service examinations.

Programme Outcomes

1. Students will have a strong foundation in the fundamentals and applications of current theoretical and practical chemistry in Analytical, Inorganic, Organic and Physical Chemistry.
2. Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.
3. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
4. Students will be able to explore new areas of research in both chemistry and allied fields such as Biochemistry, Material Chemistry, Pharmaceutical chemistry and Chemical biology and related technology.

5. Students will understand the central role of chemistry to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
6. Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution.
7. Apply knowledge to build up small scale industry for developing endogenous product
8. Provide an opportunity to act as team player by contributing in laboratory, field-based situation and industry.
9. A post-graduation in Chemistry provides the opportunities in educational sector,

pharmaceutical companies and chemical industries.

Programme Specific Outcomes

1. Global level research opportunities to pursue Ph.D. programme, targeted approach of CSIR – NET and competitive civil service examinations.
2. Enormous job opportunities at all levels of teaching, chemical, pharmaceutical, food products, life oriented material industries.
3. Specific placements in R & D and many pharmaceutical & other industries.
4. Facile development for the synthesis of biologically significant organic molecules using the green route for chemical reactions for sustainable properties.
5. To inculcate the scientific temperament in the students and outside the scientific community.
6. Learnt to handle sophisticated equipment for the determination and characterization of chemical compounds.
7. Use of the latest chemistry software to avoid the laborious work in research. Pedagogies used in the programme
8. Conventional method such as black board and chalk, and modern methods like power point presentation and information and communications technology (ICT) are used in class room teaching.
9. Molecular models are used to teach molecular symmetry, stereochemistry and solid state chemistry topics.
10. Each student performs experiments as per the protocol in practical classes.
11. For the preparation of new compounds, each student can adopt new experimental setup, and also exposed to different analytical instruments for qualitative and quantitative analyses. In addition to this, students will acquire skill to handle various instruments independently.
12. Students will be presenting seminars in each semester.
13. Each student will be subjected to viva-voce examinations in every semester.
14. Every student will work for project on a small research problem.
15. Rigorous training will be giving for every student to interpret spectral data in the respective course including their dissertation.
16. Special lectures are delivered by eminent scholars from different intuitions.
17. National/International conferences are organized to upgrade the subject knowledge.

FIRST SEMESTER

CHI HCT: 1.1. Concept and Models of Inorganic Chemistry

Course Outcome:

- Understand the structures of ionic solids and their lattice energy calculations, utilizing VSEPR concepts to analyze molecular structures.
- Explore various acid-base concepts and their applications, along with the utility of non-aqueous solvents in inorganic synthesis.
- Gain insights into the periodic properties of elements, and the chemistry and applications of lanthanides and actinides.

CHO HCT: 1.2. Stereochemistry and Reaction Mechanism

Course Outcome:

- Understand optical and geometrical isomerism in organic compounds and apply stereochemistry to regioselective and regiospecific reactions.
- Study HMOT applications to simple organic molecules, explore aromaticity, and learn methods for determining reaction mechanisms.
- Analyze nucleophilic, electrophilic, and elimination reactions.

CHP HCT: 1.3. Basic Physical Chemistry

Course Outcome:

- Acquire knowledge of the fundamentals and theoretical concepts in chemical thermodynamics, chemical kinetics, and solution electrochemistry.
- Understand reaction stability, energetics, and influencing factors.

CHA HCT: 1.4. Analytical Data Assessment and Separation Techniques

Course Outcome:

- Develop skills in sampling, purification, characterization, and data analysis using instrumental techniques.
- Build a foundation in chemical principles to understand chemical constituents in samples.
- Grasp the principles of instrumentation and their analytical applications.

CHA SCP: 1.1/2.1. Analytical Chemistry Practicals-I [128 Hours]

Course Outcome:

- Analyze various samples using classical and simple instrumental techniques.
- Gain knowledge to select appropriate analytical methods for diverse samples, including water, laboratory chemicals, reagents, and body fluids like urine.
- Differentiate between classical and instrumental methods.
- Design and conduct experiments to quantify individual analytes.

CHO SCP: 1.3/2.3. ORGANIC CHEMISTRY PRACTICALS-I [128 Hours]

Course Outcomes:

- Perform multi-step synthesis of different organic compounds.
- Conduct qualitative analysis of binary mixtures of organic compounds through separation, identification of functional groups, and preparation of solid derivatives.

CHP SCP: 1.4/2.4. PHYSICAL CHEMISTRY PRACTICALS-I [128 Hours]

Course Outcomes:

- Develop experimental skills and interpret results of physical chemistry experiments involving chemical kinetics, thermodynamics, electrochemistry, and spectrophotometry.
- Optimize reaction conditions to understand the rate of chemical reactions.

CHA SCT: 1.1/2.1. TITRIMETRIC ANALYSIS

Course Outcomes:

- Master quantitative and qualitative methods of analysis with equilibrium chemistry.
- Build a strong foundation in analytical chemistry for industrial and research applications.
- Understand statistical methods for method validation and develop reliable experimental protocols.

CHI SCT: 1.2/2.2. CHEMISTRY OF SELECTED ELEMENTS

Course Outcomes:

- Gain knowledge of hydrogen and Group 2 elements.
- Explore the chemistry of pseudohalogens, interhalogens, and noble gas compounds.

CHO SCT: 1.3/2.3. CHEMISTRY OF NATURAL PRODUCTS-I

Course Outcomes:

- Understand the chemistry, classification, and synthesis of lipids, prostaglandins, terpenoids, chlorophyll, and porphyrins.
- Learn the significance of flavonoids and isoflavonoids in biological systems.

CHP SCT: 1.4/2.4. BIOPHYSICAL CHEMISTRY

Course Outcomes:

- Understand the physico-chemical principles of biological fluids and pharmacokinetics.
- Learn bioavailability and pharmacokinetic parameters of drugs in living systems.

CHI HCT: 2.1. COORDINATION CHEMISTRY

Course Outcomes:

Gain knowledge on preparation methods, geometries, and bonding theories (CFT and MOT) of coordination compounds.

Understand electronic spectra, magnetic properties, and reaction mechanisms of coordination compounds.

CHO HCT: 2.2. SYNTHETIC ORGANIC CHEMISTRY

Course Outcome:

- Familiarity with the chemistry of oxidants, reductants, and their applications in organic synthesis.
- Understanding the various catalysts in organic synthesis through known naming reactions.
- Proficiency in retro-synthesis and molecular rearrangement.

CHP HCT: 2.3. PRINCIPLES OF PHYSICAL CHEMISTRY

Course Outcome:

- Mastery of principles of quantum chemistry and theoretical calculations of molecular energies and chemical reactions.
- Application of Schrödinger equation solutions to real systems, including vibrational, rotational, and electronic energy states.
- Understanding angular momentum in atomic or molecular systems and its importance in spectroscopy.
- Application of statistical thermodynamics in energy calculations and phase rule applications.
- Fundamentals of polymers and their role in quality control and waste management.

CHG HCT: 2.4. MOLECULAR SYMMETRY AND SPECTROSCOPY

Course Outcome:

- Understanding molecular symmetry and applications of group theory in CFT, hybridization, MOT, and vibrational spectroscopy.
- Knowledge of the theory and principles of rotational, vibrational, and Raman spectroscopy.
- Proficiency in the principles of electronic and resonance Raman spectroscopy.

CH OET: 2.1/3.1 GENERAL CHEMISTRY (Open Elective)

Course Outcome:

- Grasp of periodic properties of elements, structure, and bonding in ionic compounds, and acid-base concepts.
- Understanding hybridization, bonding, and molecular structures of simple organic molecules, and biological importance of natural products.
- Proficiency in thermodynamics, chemical kinetics, electrochemistry, and ionic equilibria with practical applications.
- Knowledge of statistical evaluation of experimental data and chromatographic methods.

CHI HCT: 3.1. ADVANCED INORGANIC CHEMISTRY

Course Outcome:

- Fundamental knowledge of organometallic chemistry, including synthesis, structure, and bonding in organometallics with applications.
- Understanding homogeneous and heterogeneous catalysis for industrial organic synthesis.
- Familiarity with the chemistry of main group elements, metal clusters, silicates, and silicones with practical applications.

CHO HCT: 3.2. ORGANOMETALLIC AND PHOTOCHEMISTRY

Course Outcome:

- Comprehensive understanding of photochemistry and pericyclic reactions for organic synthesis.
- Proficiency in the use of organometallic catalysts for organic compound synthesis.
- Skills in asymmetric synthesis using chiral compounds.

CHP HCT: 3.3. ADVANCED PHYSICAL CHEMISTRY

Course Outcome:

- Applications of reaction kinetics to biological and chemical systems.
- Expertise in electrochemical systems for e-waste management and metal protection.
- Fundamentals of X-ray crystallography and structural interpretation using X-ray diffraction techniques.

CHG HCT: 3.4. CHEMICAL SPECTROSCOPY

Course Outcome:

- Mastery of NMR, IR, UV, and mass spectrometry for spectra recording and interpretation.
- Proficiency in characterizing chemical compounds and predicting spectra from molecular structures.
- Understanding ESR, NQR, Mossbauer, and photoelectron spectroscopy principles and applications.
- Problem-solving skills related to electric and magnetic properties of molecules and their interpretation.

CHA SCP: 3.1/4.1. ANALYTICAL CHEMISTRY PRACTICALS-II [64 HOURS]

Course Outcomes:

• Get experience on analysis of various complex mixtures by following multistep reactions.

• Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.

• Acquire industrial skills required for sampling, analytical and interpretation and presentation of results.

• Possess adequate knowledge on literature search for developed analytical methods.

CHI SCP: 3.2/4.2. INORGANIC CHEMISTRY PRACTICALS-II [64 HOURS]

Course Outcomes:

• Determination of alloy samples and understanding the electrochemical deposition of metals.

• Preparation and characterization of coordination compounds.

• Determination of composition, stability constant and magnetic susceptibility of metal complexes.

CHO SCP: 3.3/4.3. ORGANIC CHEMISTRY PRACTICALS-II [64 HOURS]

Course Outcomes:

• The isolation of caffeine, carotene, lycopene, cincole, azelaic acid, and piperine from respective natural sources.

• Estimation of ketones, sugars, nitro, and amino groups in natural products.

• Interpret UV, IR, NMR, and MS data of different organic compounds.

CHP SCP: 3.4/4.4. PHYSICAL CHEMISTRY PRACTICALS-II [64 HOURS]

Course Outcomes:

• Students can develop experimental skill and interpretation of plausible mechanisms of reactions.

• Gain practical knowledge on the theoretical basis of electrochemistry, thermodynamics, and spectrophotometry experiments.

• This helps in academics, research, and industries.

ELECTROCHEMICAL METHODS OF CHEMICAL ANALYSIS

Course Outcomes:

• To understand the reaction kinetics.

• To gain the principles of radiochemical methods.

• To understand the applicability of radiometric assays.

CHI SCT: 3.2. FRONTIERS IN INORGANIC CHEMISTRY

Course Outcomes:

• Gain knowledge on design and synthesis of new inorganic materials.

• Fabrication and characterization of nanomaterials.

• Applications of ceramics, pigments, silicates, and biomaterials.

CHO SCT: 3.3. CHEMISTRY OF NATURAL PRODUCTS-II

Course Outcomes:

• Chemistry of alkaloids and their biological significances.

• Synthesis and characterization of several alkaloids and steroids.

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CHP SCT: 3.4. MATERIALS CHEMISTRY

Course Outcome:

- Understand the fundamentals and importance of different types of nanomaterials, their methods of preparation, and characterization by various techniques.
- Comprehend the basic aspects of semiconductors and superconductors, their properties, and applications.

CHO HCT: 4.2. HETEROCYCLIC AND BIOORGANIC CHEMISTRY

Course Outcome:

- Structure, reactivity, and synthesis of several heterocyclic compounds.
- Synthesis, industrial, and biological importance of carbohydrates.
- General synthesis of amino acids, peptides, nucleic acids, and their biological significance.

CHP HCT: 4.3. NUCLEAR, RADIATION, AND PHOTOCHEMISTRY

Course Outcome:

- Understand the principles of photochemistry, its experimental techniques, and applications.
- Fundamentals of radiation chemistry, experimental methods for detecting radiation, and applications of radioisotopes.
- General aspects of nuclear chemistry, different types of nuclear reactions, production, and separation of radioisotopes, and basic features of nuclear reactors.

CHA SCT: 4.1. AUTOMATED METHODS OF CHEMICAL ANALYSIS

Course Outcome:

- Understand various types of automated methods of analysis.
- Identify activities that can be fully or partially automated.
- Recognize the significance of automated chemical analysis in clinical and pharmaceutical fields for purity analysis with small sample sizes, emphasizing speed and cost-efficiency.

CHI SCT: 4.2. BIOINORGANIC PHOTOCHEMISTRY

Course Outcome:

- Basic concepts of photochemistry and photochemical reactions.
- Understand organometallic compounds as fluorescent agents for detecting cations, anions, and toxic ions in living systems.
- Comprehend the theory of photodynamics and photocatalysis.

CHO SCT: 4.3. MEDICINAL CHEMISTRY

Course Outcome:

- Acquire knowledge of the biological significance of carotenoids and vitamins.
- Understand pharmacodynamics, pharmacokinetics, and chemotherapy of various drugs.
- Synthesis and mechanism of drug actions for antimalarial, anticancer, and cardiovascular drugs.

CHP SCT: 4.4. QUANTUM CHEMISTRY AND BIOSENSORS

Course Outcome:

- Applications of quantum chemical methods for theoretical evaluation of molecular energies and reaction pathways.
- Development of chemical and biochemical sensors for determining biomolecules.

DEPARTMENT OF BIOCHEMISTRY

Programme Outcomes:

1. Develop an ability to acquire in-depth theoretical and practical knowledge of Biochemistry

2. To demonstrate an understanding of structure and metabolism of biological macromolecules and to understand the regulation and disorders of metabolic pathways.

3. The principles of bioenergetics and enzyme catalysis;

4. Understanding of metabolic pathway among prokaryotes and eukaryotes.

5. Gain proficiency in laboratory techniques in biochemistry and biological sciences like immunology, physiology, molecular biology, enzymology and biotechnology.

6. Develop an ability to understand the technical aspects of existing technologies and to provide cost efficient solutions that help in addressing the biological and medical challenges faced by mankind.

7. The practical skills are improved which help their research experience among academic or industrial R&D programs.

8. Understand the published literature by using online and offline methods; to be able to apply the scientific method to the processes of experimentation and hypothesis testing.

9. Develop an ability to translate knowledge of Biochemistry to address environmental, intellectual, societal, and ethical issues through innovative thinking and research strategies.

10. Develop an ability to put forward the scientific perception to a person/ community belonging to non-science background.

11. To inculcate skills for teaching in academic institutions for undergraduate and postgraduate students.

12. Develop confidence in taking competitive examination in the field of life sciences both in India and abroad so that they can pursue higher education.

I Semester courses

23F101 FUNDAMENTALS OF BIOCHEMISTRY

Course outcomes

1. Knowledge of Chemistry of biomolecules.
2. The fundamental principles in sequencing of DNA.
3. Importance of biomolecules in the biological system.
4. Structure and function of enzymes.

23F102 TECHNIQUES IN BIOLOGY

Course outcomes

1. Techniques in Biology.
2. The fundamental principles in cell homogenization.
3. Importance of bio analytical techniques.
4. Significance of radiochemistry and mass spectroscopy.

23F103 MOLECULAR CELL BIOLOGY

Course outcomes

1. Structural and functional components of a cell.
2. Role of cell cycle and its regulation.
3. Phytochemicals in cancer treatment and stems cells.
4. Receptors of signaling pathways.

23F104 BIOORGANIC AND BIOINORGANIC CHEMISTRY

Course outcomes

1. The basics in chemical reactions.
2. Chemical bonding.

3. Stereochemistry of biomolecules.

4. Different types of heterocyclic compounds and their biological role.

23F105 PRACTICAL 1A - Experiments in Biological techniques andBioorganic chemistry & Tour Report (Laboratory Visit and Tour Report)

Course outcomes

1. Proficiency in laboratory techniques in biological sciences.

2. Practical applications of various chromatography techniques in separation of bioactive compounds.

3. Estimation of different biomolecules using colorimeter.

4. Proficiency in preparing a tour report document after visiting biology- based industries and research institutes.

23F106 PRACTICAL 1B- Experiments in Cell Biology, Genetics and Bioinorganic chemistry & Seminar

Course outcomes

1. Proficiency in microscopic examination of cells.

2. Proficiency molecular cell biology experiments.

3. Proficiency in solving genetic problems.

4. Proficiency in presenting a seminar on a specific topic and discuss the concept.

23F107 GENETICS

Course outcomes

1. Model organisms available to study genetics.

2. Mutation and mutagenesis.

3. Detailed account on transposable elements and transpositions.

4. Types of DNA recombination and DNA repair.

23F108 MEMBRANE BIOLOGY

Course outcomes

1. Understand properties of biological membrane, and different models of membranes explaining the biological function.
2. Understand membrane asymmetry and other properties using various methods.
3. Understand the complex mechanism involved in transportation of biomolecules across membranes.
4. Nerve transmission.

II Semester courses

23F201 MOLECULAR BIOLOGY

Course outcomes

1. The idea about the principles behind molecular biology.
2. Understand the molecular tools and its application in basic research and applied research in various fields of life sciences.
3. Understand regulation of gene expression.
4. Significance of non-coding RNA.

23F202 ENZYMOLOGY

Course outcomes

1. Chemistry of enzyme catalysis.
2. Enzyme kinetics.
3. Regulation of enzyme activity
4. Enzyme inhibition

23F203 PRACTICAL 2A - Experiments in Molecular Biology and Energy Metabolism; Laboratory visits and Tour report

Course outcomes

1. Proficiency in laboratory techniques in molecular biology and energy metabolism.
2. Proficiency in the experiments to articulate the metabolic pathways.
3. Efficacy in testing the markers for health and disease.
4. Proficiency in real time functioning of the industries and institutes of national and international repute.

23F204PRACTICAL 2B- Experiments in Enzymology and Research Paper Presentation

Course outcomes

1. Proficiency in isolation of cell organelles and its assessment.
2. Proficiency in isolation of biomolecules and its analysis.
3. Clinical relevance of biomolecules.
4. Isolation and understanding the significance of various lipids.

23F205METABOLISM OF LIPIDS

Course outcomes

1. The basics of metabolism.
2. Role of lipids in metabolism.
3. Role of lipid mediators.
4. Interactions among the metabolic enzymes.

23F206 METABOLISM OF CARBOHYDRATES

Course outcomes

1. Chemistry of carbohydrate metabolism.
2. The fundamental thermodynamic principles in metabolism.
3. Importance of carbohydrate metabolism.
4. Role of hormones in the regulation of carbohydrate metabolism.

23F207 ENDOCRINOLOGY

Course outcome

1. Understand the detailed structure of a cell
2. Involvement of various organelles in the synthesis of protein, amino acid and steroid hormones.
3. Understand the various endocrine organs in relation to the regulation of various metabolic processes.
4. Understand the hypo and hyperactivities of all the endocrine organs and their manifestation in various disorders.

23F208-BIOLOGY FOR NON-BIOLOGISTS (OE)

Course outcome

1. Student would be able to work independently to use scientific methods during biology related investigations.
2. Use critical thinking and scientific problem-solving to make informed decisions in a real-world context.
3. Understand cellular processes in a living being.
4. Human disease.

23F209-NUTRITION IN HEALTH AND DISEASE (OE)

Course outcome

1. Describe how to properly design individualized eating plans by utilizing diet planning principles,
2. The Food Guide Pyramid, Exchange System
3. Other food guide plans that incorporate personal food preferences.
4. Students will learn about food and its relationship to health, development, and disease/ disorders.

III Semester courses

23F301 IMMUNOLOGY

Course Outcomes

1. Organs, tissues, cells and molecules of the immune system
2. The immunological methods used to detect the disease
3. How the knowledge of immunology can be transferred into clinical decision-making through case studies presented in class.
4. Importance of immunological techniques

23F302 METABOLISM OF AMINO ACIDS AND PROTEINS

Course outcomes

1. Chemistry of nucleic acid metabolism.
2. Importance of nucleic acid metabolism.
3. Mechanism of photosynthesis
4. Nitrogen metabolism

23F303 PRACTICAL 3A- Experiments in Immunology and amino acid metabolism.

Study tour and tour report

Course outcomes

1. Proficiency in laboratory techniques in immunology.
2. Proficiency in understand the clinical significance of different end products of metabolism.
3. Proficiency in laboratory techniques in amino acid metabolism
4. Proficiency in preparing a tour report document after visiting immunology or biology based industries and research institutes.

23F304 PRACTICAL 3B- Experiments in Metabolism and Review of Literature Course outcomes

1. Proficiency in enzyme isolation and purification techniques.
2. Proficiency in enzyme kinetics.
3. Proficiency in assessment of clinically relevant enzymes.
4. Proficiency in understanding a research article in the field of Biochemistry and related streams, and present as a platform presentation.

23F305 METABOLISM OF NUCLEIC ACID

Course outcomes

a. Chemistry of nucleic acid metabolism. .
b. Importance of nucleic acid metabolism.
c. Mechanism of photosynthesis
d. Nitrogen Metabolism

23F306 RESEARCH METHODOLOGY, BIOSTATISTICS AND BIOINFORMATICS

Course outcomes

1. Basics and ethics in research. Various streams of ethical responsibilities of researchers at societal, environmental, legal and emotional ethics.

2. Importance of plagiarism. National and international guidelines about Intellectual property rights. Basics and ethics in research. Writing and analysis of research articles.

3. Knowledge of basic statistical methods to solve problems.

4. The importance of statistics in research and prepares them for a career in research. Understanding about the sequence analysis tools and also about the drug discovery.

23F307 HUMAN PHYSIOLOGY WITH CLINICAL RELEVANCE.

Course outcomes

1. Biological processes involving membranes.

2. Importance of membranes in the biological system

3. Nutritional significance

4. Disorders related to nutrition and digestion

23F308 INTERNSHIP

Course outcomes

1. Evaluate career goals and aspirations

2. Enhance resume and job prospects

3. Develop problem solving and critical thinking skills

4. Gain insight into company culture and operations.

IV Semester courses

23F401 RESEARCH PROJECT WORK, REPORT AND VIVA VOCE

Course outcomes

1. Enhanced laboratory skills.
2. Efficiency in identifying a research problem and plan a research work.
3. Appropriate review of literature and selection of proper laboratory methods.
4. Application and importance of statistics.
5. Make the appropriate conclusions of the research data.

23F402 CLINICAL BIOCHEMISTRY

Course outcomes

1. Application of Biochemistry in the clinical diagnosis.
2. Importance of biochemical parameters in the clinical diagnosis.
3. Hepatobiliary disorders
4. GI tract disorders and diagnosis.

23F403 BIOTECHNOLOGY

Course outcomes

1. Understand the principle and methodology employed in the growth of microorganisms
2. Understand the various parameters affecting the growth of industrially important microorganisms.
3. Understand the importance of plant and animal cell culture to produced therapeutically important secondary metabolites
4. Understand the applications of industrial fermenters.

23F404 PLANT BIOCHEMISTRY

Course outcomes

1. Biological processes involving membranes.
2. Importance of membranes in the biological system
3. Nutritional significance for plants
4. Stress physiology in plants and transportation of ions and molecules

23F405 HUMAN NUTRITION

Course outcomes

1. Biological processes involving digestion, absorption of foods.
2. Importance of nutritional composition
3. Nutritional significance for infants, nursing mothers, pregnant, children and adults.
4. Understanding of nutritional disorders.

Mahajana Education Society (R) Education to Excel

Pooja Bhagavat Memorial Mahajana Education centre Post Graduate wing of

SBRR Mahajana First Grade College (Autonomous) Metagalli,

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DEPARTMENT OF STUDIES IN BIOTECHNOLOGY

[Choice Based Credit System (CBCS)]

Programme Outcomes

PO1: The programme focuses on basic understanding in the diverse fields of biotechnology.

PO2: The programme emphasis on scientific research and its industrial applications.

PO3: The programme gives emphasis on skill development and research training in the field of biotechnology.

PO4: It enables the students to plan, design, execute, analyze, and solve industrial and research associated problems.

PO5: The objective of this programme is to make students competitive.

PO6: This programme is designed in such as way that they attain successful career in industries, research and academic institutions.

PO7: The programme comprehend and integrate theoretical and practical skills.

PO8: The programme imparts knowledge in basic and applied disciplines of biotechnology.

PO9: The students are motivated to develop a research plan to solve biotechnological problems.

PO10: The Programme enhances the ability to design new biotechnological products

PO11: The students can apply knowledge of biotechnology in an integrated manner.

PO12: The Programme is designed in such a way that the student is trained enough to take employment in diverse areas of biotechnology as well as for further higher studies.

MOLECULAR CELL BIOLOGY (FCHC)

Course Outcome: Students should study this paper to know

1. The structures and purposes of basic components of prokaryotic and eukaryotic cells,especially macromolecules, membranes, and organelles.
2. Cell cycle and cellular processes.
3. Concept of cancer biology and signal transduction.
4. Phytochemicals in cancer treatment and stems cells.

FUNDAMENTALS OF BIOCHEMISTRY (FCHC)

Course Outcome: Students should study this paper to know

1. The basics of biomolecules.
2. Functions of biomolecules in the biological system.
3. Interactions among the biomolecules in the nature.
4. The fundamental principles in sequencing of DNA.

TECHNIQUES IN BIOLOGY (FCHC)

Course Outcome: Students should study this paper to know

1. This paper is designed to give a brief introduction to most of the techniques used in the field of biological analyses.
2. Nevertheless, the topics in this paper are to be taught compendiously.
3. The fundamental principles in cell homogenization.
4. Importance of bioanalytical techniques.

PRACTICAL- I (HC)

(Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics / Microbiology/Food and Environmental Biotechnology)

Course Outcome: Students should study this paper to know

1. Understanding the cell organelle, chromosome structure and mutation analysis.
2. Methodology applied to prepare buffers and solutions.
3. Hands on training in chromatographic techniques.
4. Isolation, enumeration and biochemical characterization of microbes.
5. Functional foods and environmental protection.

GENETICS (FCSC)

Course Outcome: Students should study this paper to know

1. The development of Genetics and the principles of Mendel.
2. The concepts of Viral, Bacterial, Fungal & Algal genetics.
3. Mutation and Mutagenesis.
4. Detailed account on transposable elements and transpositions.

MICROBIOLOGY (FCSC)

Course Outcome: Students should study this paper to know

1. The characteristics of microbes, their taxonomy and diversity.
2. The growth of microbes and their control.
3. The relationship between microbes and environment.
4. The beneficial and harmful effects of microorganisms.

FOOD AND ENVIRONMENTAL BIOTECHNOLOGY (SC)

Course Outcome: Students should study this paper to know

1. The knowledge about fermentation and fermented products and nutrition.
2. The functional foods and genetically modified foods.
3. The detailed account of Environment and bioremediation of pollutants.
4. The knowledge of phytoremediation.

MOLECULAR BIOLOGY (FCHC)

Course outcome: Students should study this paper to know

1. To understand biological activities and metabolism at DNA and protein level
2. The course gives an in-depth insight into the molecular aspects of life - the central dogma.

3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases- mutations genetic analysis etc.

4. Understand the molecular tools and its application in basic research and applied research in various fields of life sciences.

GENETIC ENGINEERING (FCHC)

Course Outcome: Students should study this paper to know

1. To understand cloning and expression vectors.
2. Methods involved in gene manipulation and techniques of gene analysis.
3. The vast knowledge of gene editing.
4. The knowledge about the Ex vivo and in vivo gene therapy.

Practical-II (HC)

(Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology /Bioprocess Technology)

Course Outcome: Students should study this paper to know

1. Performing the methodology applied to extract DNA & RNA fromdifferent sources.
2. Determining the purity, concentration and applying it for different digests and ligates.
3. Isolating the plasmid and inducing the gene expression..
4. Producing the recombinant protein.
5. Analyzing the molecular diagnosis of diseases using PCR and ELISA.

MOLECULAR DIAGNOSTICS (FCSC)

Course Outcome: Students should study this paper to know

1. The course focuses on learning and understanding how the various molecular techniques that were studied can be developed and utilized in diagnosis.

2. The course explains common analytical techniques and molecular techniques related to the development and use of diagnostics.

3. Students learn about the clinical applications of molecular diagnostic in patients with infectious disease.

4. They can find their future focus in biotechnology companies developing and marketing Diagnostic kits.

MOLECULAR PLANT PATHOLOGY (SC)

Course Outcome: Students should study this paper to know

1. The concepts of plant pathology

2. The host pathogen interaction.

3. The genetics of plant diseases and resistance.

4. Application of molecular biology to conventional disease control strategies

OPEN ELECTIVE - BIOTECHNOLOGY FOR HUMAN WELL-BEING

(For other discipline students)

Course Outcome: Students should study this paper to know

1. The basic concepts of Biotechnology.

2. The Vast application of Biotechnology in industry, environment, agriculture forensic science & livestock improvement.

3. The role of biotechnology in improving human health

4. The entrepreneurial possibilities

PLANT BIOTECHNOLOGY (HC)

Course Outcome: Students should study this paper to know

1. The goal of this course is to introduce biotechnology methods in plants.
2. Handling of classical and modern plant biotechnology processes.
3. Understanding breeding of healthy plants for improved characteristics andplants for biomolecule production.
4. Applications of Plant Biotechnology in pharmaceuticals, food industry and in agriculture.

IMMUNOLOGY (FCHC)

Course Outcome: Students should study this paper to know

1. Role of immune system in maintaining health
2. Cellular and molecular basis of immune responses
3. How immune responses are triggered and regulated
4. How the knowledge of immunology can be transferred into clinical decision-making through case studies presented in class.

ANIMAL BIOTECHNOLOGY (SC)

4 credits 48 Hours

Course Outcome: Students should study this paper to know

1. Culturing of animal cells and steps in production of transgenic animals
2. Techniques in animal cell culture
3. Cloning of animals
4. Approaches for tissue engineering

PRACTICAL- III (HC):

(Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)

Course Outcome: Students should study this paper to know

1. Hands on training in plant tissue culture
2. Performing the production of synthetic seeds.
3. Performing animal cell culture techniques.
4. Performing immunotechniques.
5. Drug discovery, isolation of genes and protein purification.

NATURAL PRODUCTS & DRUG DISCOVERY (SC)

Course Outcome: Students should study this paper to know

1. The prospects of Natural products in 21st Century.
2. The use of different natural sources for discovery of drug.
3. To perform molecular modelling.
4. Regulatory guidelines for preclinical studies

BIOSTATISTICS & BIOINFORMATICS (SC)

Course Outcome: Students should study this paper to know

1. Knowledge of basic statistical methods to solve problems.
2. Students are taught to operate various statistical software packages.
3. The in-depth knowledge about the bioinformatics.
4. Understanding about the sequence analysis tools and also about the drug discovery.

Course Name : BIOSTATISTICS & BIOINFORMATICS (SC)

Course Outcome: Students should study this paper to know

1. The concepts of genome, genome sequencing and genome mapping
2. The role of molecular markers in comparative genomics
3. The knowledge about structural and functional proteomics
4. Understanding about the mass spectra analysis.

PROJECT WORK (HC)

Course Outcome: Students should study this paper to know

1. Review research papers for find out gap in the literature.
2. Understand designing experiments based on the research problem.
3. Understand compiling and analyzing of data.
4. Able to write a comprehensive project report/review.

DEPARTMENT OF MICROBIOLOGY

Programme Outcomes:

1. Students will have a strong foundation in the fundamentals and applications of current theoretical and practical Microbiology in Microbial culture, Identification, Biochemical analysis and Biological activities from microbial metabolites

2. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.

3. Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.

4. Students will be able to explore new areas of research in both microbiology and other fundamental life science fields such as Biochemistry and Biotechnology.

5. Students will understand the central role of microbiology to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

6. Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to health and environmental concern.

7. Apply knowledge to build up small scale industry for developing endogenous product

8. Apply various aspects of microbiology in natural products isolations, pharmaceuticals, dyes, textiles, polymers, petroleum products, forensic etc. and also to develop interdisciplinary approach of the subject.

9. The course curriculum incorporates basics and advanced training in order to make a student capable of expressing the subject through technical writing as well as through oral presentation.

10. Provide an opportunity to act as team player by contributing in laboratory, field-based situation and industry.

11. Use modern techniques, decent equipment's and analytical software's.

12. A post-graduation in Microbiology provides the opportunities in educational sector, pharmaceutical companies and chemical industries.

I Semester

HARDCORE: BACTERIOLOGY

Course outcome: Students should study this paper to know –

1. The structure of bacteria and its identification
2. The different agents to inhibit bacteria
3. The concept and working principles of microscopes
4. Classification and salient features of different groups of bacteria

Hardcore Virology

Course outcome: Students should study this paper to know –

1. Structure and functioning of viruses
2. Infectious cycle and replication pattern
3. Viruses as tool for vaccination
4. Host and virus specific responses

TECHNIQUES IN BIOLOGY (FCHC)

Course outcome: Students should study this paper to know –

1. This paper is designed to give a brief introduction to most of the techniques used in the field of biological analyses
2. Nevertheless the topics in this paper are to be taught compendiously.
3. Techniques in Biology
4. The fundamental principles in cell homogenization

HARDCORE: MOLECULAR CELL BIOLOGY(FCHC)

Course outcome: Students should study this paper to know –

1. The Cellular organization.
2. Study of phytochemicals in cancer biology.
3. Signaling transduction in cells.

4. Structure and function of cell.

SOFTCORE: ENVIRONMENTAL MICROBIOLOGY

Course outcome: Students should study this paper to know –

1. The evolution of life, microorganisms and soil interaction
2. Adaptation of microorganisms
3. The ecological succession of microorganisms and its adaptation
4. Bioremediation concept of microorganisms

SOFTCORE: FUNDAMENTALS OF BIOCHEMISTRY(FCHC)

Course outcome: Students should study this paper to know –

1. The basics ofbiochemistry.
2. Lipids and metabolism
3. Importance ofbiochemistry.
4. Application of biochemistry knowledge in thesociety.

PRACTICAL IA: (Techniques in Biology & Bacteriology & Virology)

Course outcome: Students should study this paper to know –

1. Structure and functioning ofviruses
2. Infectious cycle and replication pattern
3. The fundamental principles in cellhomogenization
4. The concept and working principles ofmicroscopes

PRACTICAL IB: (Molecular Cell Biology & Environmental Microbiology)

Course outcome: Students should study this paper to know –

1. Phytochemical role in cellular process and cancerbiology
2. Importance of growth factors and cellularsignalling.
3. Importance of bioanalyticaltechniques
4. Techniques in Biology

II SEMESTER

HARDCORE: MOLECULAR BIOLOGY(FCHC)

Course Outcome: After studying this paper the students will know –

1. To understand biological activities and metabolism at DNA and proteinlevel
2. The course gives an in-depth insight into the molecular aspects of life - the central dogma.
3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases-mutationsgenetic analysisetc.
4. The student will get an idea about the principles behind molecularbiology

HARDCORE:GENETIC ENGINEERING(FCHC)

Course outcome: Students should study this paper to know –

1. The basics of Geneticengineering.
2. Basic principles of gene cloning and geneproducts.
3. Applied aspects of Geneticengineering
4. Importance of Recombinant DNA Technology.

SOFTCORE: MICROBIAL PHYSIOLOGY

Course Outcome: After studying this paper the students will know –

1. This course deals with characteristics, properties and biological significance of the biomolecules of life.
2. In depth knowledge of the energetic and regulation of different metabolic processes in microorganisms.
3. The student develops understanding of the laws of thermodynamics, concepts of entropy, enthalpy and free energy changes and their application to biological systems and various biochemical studies and reactions.
4. Conceptual knowledge of aerobic and anaerobic respiration and various intermediary

mechanisms involved, oxidativephosphorylation.

SOFTCORE: MOLECULAR DIAGNOSTICS(FCSC)

Course outcome: Students should study this paper to know

1. The course focuses on learning and understanding how the various molecular techniques that were studied can be developed and utilized in diagnosis.

2. The course explains common analytical techniques and molecular techniques related to the development and use of diagnostics.

3. Students learn about the clinical applications of molecular diagnostic in patients with infectious disease.

4. The student will get an idea about the concept of molecular diagnosis and underpinning the successful application of gene therapy or biologic response modifiers as well they can find their future focus in biotechnology companies developing and marketing Diagnostic kits.

SOFTCORE: GENETICS

Course outcome: Students should study this paper to know –

1. The basics of genetic transmission

2. Study on microbial genetic factors and mutation.

3. Study on genetic basis of sex determination and transposable elements

4. Mendel's Experiments and extra nuclear inheritance.

PRACTICALS IIA :(Molecular Biology & Genetic Engineering)

Course outcome: Students should study this paper to know

1. Makes students to understand the basic molecular tools and its application in basic research and applied research in various fields of life sciences.

2. The fundamental cloning vectors.

3. Preparation of probes and its application in scientific fields

4. The course gives an in-depth insight into the molecular aspects of life - the central dogma

PRACTICALS IIB:(Microbial Physiology & Industrial Microbiology)

Course outcome: Students should study this paper to know

1. Overview of major biomolecules: Classification, structure, function of carbohydrates, lipids, proteins, aminoacids, nucleicacids.

2. Discuss the biosynthesis and the degradation pathways involved in the physiology ofmicrobes.

3. Conceptual knowledge of properties, structure, function of enzymes, enzyme kinetics and their regulation, enzyme engineering, Application of enzymes in large scale

4. This course deals with characteristics, properties and biological significance of the biomolecules of life.

III SEMESTER

HARDCORE: MEDICALMICROBIOLOGY

Course outcome: Students should study this paper to know –

1. Basis of microbial infection

2. Mode of action of drugs on microbes

3. Diagnosis of microbial infectious diseases

4. Transducing signals in host

IMMUNOLOGY (FCHC)

Course outcome: Students should study this paper to know –

1. Role of immune system in maintaining health

2. Cellular and molecular basis of immune responses

3. How immune responses are triggered and regulated

4. Organs, tissues, cells and molecules of the immune system

SOFTCORE: FOOD MICROBIOLOGY

Course outcome: Students should study this paper to know –

1. Basis of food bornemicrobes
2. Nutritive value of foods/Nutraceuticals
3. Food bore pathogendetection
4. Expertise in detecting foodpoisoning

SOFTCORE:AGRICULTURAL MICROBIOLOGY

Course outcome: Students should study this paper to know –

1. This paper of microbiology and biochemistry of soil is designed with the objective to provide general introduction of soil and in depth information on soil microbial diversity and the role of microorganisms in biogeochemical cycling of elements like C,N,P and trace elements and soil fertility.
2. The importance of physical, chemical and biological properties of soil.
3. Role of microorganisms in biogeochemicalcycling.
4. Microbiology and physiology of degradation of native and organic matter and Nitrogenfixation.

SOFTCORE: MYCOLOGY

Course outcome: Students should study this paper to know –

1. Basis of fungaltaxonomy
2. Fungal characteristics' and its economic importance
3. Expertise in detecting fungal identification
4. Interaction of fungus with different commodity

SOFTCORE: GENOMICS AND PROTEOMICS

Course outcome: Students should study this paper to know

1. The concepts of genome, genome sequencing and genome mapping
2. The knowledge about structural and functional proteomics
3. Next generation sequencing, Human Genome Project.
4. Understanding about the mass spectra analysis.

PRACTICALS IIIA: (Immunology & Medical Microbiology & Food Microbiology)

Course outcome: Students should study this paper to know

1. The immunological methods used to detect the disease
2. How the knowledge of immunology can be transferred into clinical decision-making through case studies prese class
3. Interaction of microbes with different food commodity the role of molecular markers in comparative genomics

PRACTICALS IIIB : (Mycology and Agricultural Microbiology)

Course outcome: Students should study this paper to know

1. Isolation of slimemolds.
2. Isolation of aquaticfungi.
3. Isolation of soilfungi.
4. Isolation of fungi fromair.
5. Isolation of fungi from cereals and cereal based products.

IV SEMESTER

SOFTCORE: INDUSTRIALMICROBIOLOGY

Course outcome: Students should study this paper to know –

1. Industrial microbiology & fermentation contains improved biochemical or physiological fermentation are mainly carried out by fungi and bacteria on large scale to produce commercial products.

2. The main objective of industrial fermentation is to produce highest quality and quantity of particles produce by combining.

3. Microbes involved infermentation.

4. The basics of fermentationtechnology.

HARDCORE: Research Project Work, Report and Viva Voce

Course outcome:

1. Students will able to choose an appropriate topic for study and will able to clearly formulate and state research problems

2. Students will be able to complete the relevant literature and frame hypothesis for research

3. Students will able to plan research design

4. Student will able o compile relevant data, interpret and analyze it and test the hypothesis where ever applicable

5. Students will able to defend his /her work in front of a panel of examiners

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