SJR COLLEGE FOR WOMEN

RAJAJINAGAR, BANGALORE – 10

ACCREDITED WITH 'B++' GRADE BY NAAC

PROGRAMME OUTCOMES

&

COURSE OUTCOMES

2023 - 2024

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PROGRAMME OUTCOMES (2023 – 2024)

POSTGRADUATE PROGRAMME

PROGRAMME: MCom

DEPARTMENT OF MCom

PO 1: Primed individual for a career in finance, accounting, taxation and corporate sector.
PO 2: Face the challenges of business at the national and global level with managerial andanalytical skills.
PO 3: Meet the growing needs of business society and emerge as professional leaders.
PO 4: Pursue research in commerce related chosen areas.
PO 5: Encourage to become Entrepreneurs

UNDERGRADUATE PROGRAMMES

PROGRAMME: BBA

DEPARTMENT OF BUSINESS ADMINISTRATION

PO 1: Build a strong foundation in management and business subjects.
PO 2: Seek variety of career options in management and business-related fields.
PO 3: Equip students with skills and knowledge to excel in their future careers.
PO 4: Develop entrepreneurial skills.
PO 5: Attain necessary skills for effective business communication.
PO 6: Enter master programme like M.Com, MBA and pursue professional programmes like C.A., CMA, C.S. etc.

PROGRAMME: BCA

DEPARTMENT OF COMPUTER SCIENCE

PO1: To work effectively both as an individual and a team leader on multi-disciplinary projects.
PO2: Inculcates the ability to analyse, identify, formulate and develop computer applications using modern computing tools and techniques.
PO3: Improves communication skills so that they can effectively present technical information in oral and written reports.
PO4: Prepares to create and design innovative methodologies for solving complex-real life problems for the betterment of the society.
PO5: To integrate ethics and values in designing computer applications.
PO6: Aims to educate students to identify and analyse complex scientific, societal, industrial problems and reaching effective software solutions using principles of mathematics, appropriate software tools, programming languages.
PO7: The programme aims to provide technology-oriented students with the ability to design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the societal and environmental considerations.
PO8: This program develops human resources for government organizations, IT industries as well as equip students to start their own business.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PROGRAMME: BCom

DEPARTMENT OF COMMERCE

PO 1: The programme aims to equip students with necessary knowledge, skills and otherattributes to prepare them for participating in any modern business environment,practice in any commercial profession and/or to pursue further academic endeavours.
PO 2: Graduates of this degree will be able to demonstrate their skills in Accounting,Auditing, Finance, Investments, Banking, Insurance, Marketing, Human resourcemanagement and Organizational Behaviour along with the knowledge of quantitativetechniques and other major theories of economics associated with these subjects.
PO 3: Students will be able to demonstrate their communication and literary skills in Englishand other Indian languages. Additionally, the curricular and extracurricular activities are designedto provide for holistic development of an individual.

PROGRAMME: BSc

DEPARTMENT OF BIO-TECHNOLOGY

PO1: Understand concepts in Biotechnology and demonstrate knowledge acquired in interdisciplinary skills in cell biology and genetics.
PO2: Comprehend the structure of a cell with its organelles.
PO3: Understand the chromatin structure and its location.
PO4: Understand the basic principles of lifeand how a cell divides.
PO5: Explain the organisation of genes and chromosomes,chromosome morphology and its aberrations
PO 6: To familiarize the students with Scope of Microbiology, Microscopy, Microbial Techniques, Stains and staining techniques etc.
PO 7: Concepts of sterilization techniques.
PO 8:Students will be taught microbial techniques, antimicrobial agents and assessment methods.
PO 9: This program develops human resources for government organizations, medical and biotechnology industries as well as equip students to start their own business in life sciences.

PROGRAMME: BSc

DEPARTMENT OF BOTANY

PO1: Skill development in the field of Botany including using botanical terms, identification, naming andclassification of life forms especially plants and microbes.
PO2: Acquisition of knowledge on structure, life cycle and life processes that exist among plant andmicrobial diversity through certain model organism studies.
PO3: Understanding of various interactions that exist among plants and microbes; to develop thecuriosity on the dynamicity of nature.
PO4: Understanding of the major elements of variation that exist in the living world throughcomparative morphological and anatomical study.
PO5: Ability to explain the diversity and evolution based on the empirical evidences in morphology,anatomy, embryology, physiology, biochemistry, molecular biology and life history.
PO6: Skill development for the collection, preservation and recording of information afterobservation and analysis- from simple illustration to molecular database development.
PO7: Making aware of the scientific and technological advancements- Information andCommunication, Biotechnology and Molecular Biology for further learning and research in allbranches of Botany.
PO 8: Internalization of the concept of conservation and evolution through the channel of spirit ofinquiry.
PO9: To enable the graduates to prepare for national as well as international level competitiveexaminations like UGC-CSIR, UPSC, and KPSC etc.

PO 10: To enable the students for practicing the best teaching pedagogy as a biology teacherincluding the latest digital modules.
PO 11: The graduates should be knowledgeable and competent enough to appropriately deliver onaspects of global importance like climate change, SDGs, green technologies etc. at the rightopportunity.
PO 12: The graduate should be able to demonstrate sufficient proficiency in the hands-onexperimental techniques for their area of specialization within biology during research and in theprofessional career.

PROGRAMME: BSc

DEPARTMENT OF CHEMISTRY

PO 1: Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and PhysicalChemistries.
PO 2: Students gain theoretical, practical knowledge and skills required to succeed in graduateschool and the chemical industry like, field of food safety, health inspector, pharmacist,cement industries, agro product, Paint industries, Rubber industries, Petrochemical industries, Food processing industries, Fertilizer industries etc.
PO 3: Students will be able to design and carry out scientific experiments as well as accuratelyrecord and analyse the results of such experiments.
PO 4: Students will be skilled in problem solving, critical thinking and analytical reasoning asapplied to scientific problems.
PO 5: Students will be able to clearly communicate the results of scientific work in oral, written andelectronic formats to both scientists and the public at large.
PO 6: Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
PO 7: Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling ofchemicals, environmental issues and key issues facing our society in energy, health andmedicine.
PO 8: Students will be able to function as a member of an interdisciplinary problem-solving team.

PROGRAMME: BSc

DEPARTMENT OF PHYSICS

PO1: Programme helps in building foundation for higher studies andinterdisciplinary research in the field of interest.
PO2: Learning Physics enhances problem solving ability, Scientificreasoning, critical and analytical thinking.
PO3: Physics students can connect basic science with technology in day-to-day life.
PO4: To develop broad and balanced knowledge and understanding ofphysical concepts, principles and theories of Physics.
PO5: The knowledge in physics provides various opportunities in the fieldof science and technology.
PO6: Learn, design and perform experiments in the labs to demonstrate theconcepts, principles and theories learned in the classrooms.
PO7: Develop the ability to apply the knowledge acquired in the classroomand laboratories to specific problems in theoretical and experimentalPhysics.
PO8: The programme encourages the students to pursue higher educationand research work in the field of Astrophysics, Nanomaterials, QuantumMechanics, Material Science etc.

PROGRAMME: BSc

DEPARTMENT OF MATHEMATICS

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PO1: Disciplinary Knowledge: Bachelor degree in Mathematics is the culminationof in-depth knowledge of Algebra, Calculus, Geometry, differential equations andseveral other branches of pure and applied mathematics. This also leads to study therelated areas such as computer science and other allied subjects

PO 2: Communication Skills: Ability to communicate various mathematical conceptseffectively using examples and their geometrical visualization. The skills andknowledge gained in this program will lead to the proficiency in analytical reasoningwhich can be used for modelling and solving of real life problems.

PO 3: Critical thinking and analytical reasoning: The students undergoing thisprogramme acquire ability of critical thinking and logical reasoning and capability ofrecognizing and distinguishing the various aspects of real-life problems.

PO 4: Problem Solving : The Mathematical knowledge gained by the studentsthrough this programme develop an ability to analyse the problems, identify anddefine appropriate computing requirements for its solutions. This programmeenhances students' overall development and also equip them with mathematicalmodelling ability, problem solving skills.

PO 5: Research related skills: The completing this programme develops thecapability of inquiring about appropriate questions relating to the Mathematicalconcepts in different areas of Mathematics.

PO 6: Information/digital Literacy: The completion of this programme will enablethe learner to use appropriate software's to solve system of algebraic equation anddifferential equations.

PO 7: Self – directed learning: The student completing this program will develop anability of working independently and to make an in-depth study of various notions ofMathematics.

PO 8: Moral and ethical awareness/reasoning: The student completing this programwill develop an ability to identify unethical behaviour such as fabrication, falsificationor misinterpretation of data and adopting objectives, unbiased and truthful actions inall aspects of life in general and Mathematical studies in particular.

PO 9: Lifelong learning: This programme provides self-directed learning andlifelong learning skills. This programme helps the learner to think independently anddevelop algorithms and computational skills for solving real word problems.

PO 10: Ability to peruse advanced studies and research in pure and appliedMathematical sciences.

PROGRAMME:BBA / BCA / BCom / BSc

DEPARTMENT OF ENGLISH

PO 1: Students gain the knowledge in the language section which is designed to hone the grammatical aspects pertaining to effective verbal expressions and Communication.

PO 2: It is hoped that the students would make best use of the importance of acquiring finelanguage skills while engaging with medium like literature.

PO 3: The course material is designed with an integrated approach to language learning,emphasizing on essential skills of the language. The work book compliments the course book.

PO 4: The course book material reflects on variety and diversity in terms of language used and thethemes discussed (American, African and Indian short stories). Poetry selections reflectclassic literature.

PO 5:The Literary component reflects different genres such as two act play, Novel, persuasivespeeches. Selections have been made on the basis of novelty and relevance.

PROGRAMME:BBA / BCA / BCom / BSc

DEPARTMENT OF KANNADA

PO 1: To gain expertise in Kannada language and literature.

PO 2:Help provide proficiency to the students of various programmes in Kannada with opportunities for Higher Education and alsoemployment opportunities in language research.

PO 3: To help students gain knowledge in the field of Kannada arts and literature throughcommunication,journalism, literary research and criticism to make thestudents employable.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PO 4: Through several articles, the students realize that the ideas related to theintegration of Kannada Nadu and Karnataka are obstacles to scientificthinking.
PO 5:To imbibe creative thinking and critical thinking skills.
PO 6: Realize humanity and know the achievements of India in the fieldof language.
PO 7: Learn how to behave responsibly in relation to religious tolerance andharmony.

PROGRAMME:BBA / BCA / BCom / BSc

DEPARTMENT OF HINDI

PO 1: To help students learn the basic and fundamental concept of prose in Hindi.
PO 2: To help students know the different areas of prose genres through lessons in Hindi.
PO 3: To gain knowledge of business letter drafting in Hindi language.
PO 4: Students master knowledge in communication skills, reading skills and writing skillseffectively like professionals and continue learning in the field of Hindi language andliterature.
PO 5: To teach the students the values of self-reliance and service.

PROGRAMME:BBA / BCA / BCom / BSc

DEPARTMENT OF SANSKRIT

PO 1: To help students learn the basic and fundamental concept of prose in Sanskrit.
PO 2: To help students know the different areas of prose genres through lessons in Sanskrit.
PO 3: To gain knowledge of business letter drafting in Sanskrit language.
PO 4: Students master knowledge in communication skills, reading skills and writing skillseffectively like professionals and continue learning in the field of Sanskrit language andliterature.
PO 5: To teach the students the values of self-reliance and service.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

COURSE OUTCOMES (2023 – 2024)

POSTGRADUATE PROGRAMME

PROGRAMME: MCom

DEPARTMENT OF MCom

SEMESTER I: Global Business Environment

CO 1: Global Business and Environment - Understand the key issues related to their operations in other countries.

CO 2: Global Economic Environment - Understand the concepts in IB with respect to foreigntrade.

CO 3: Global Trade and InvestmentEnvironment - Compare and contrast cultures and societies globally
using socio-economic and cultural frameworks.

CO 4: Multinational Corporation - Analyse the principle of IB and strategies adopted byfirms to expand globally.

CO 5: Social Responsibilities and Ethics - Integrate concepts of IB with functioning of globaltrade.

SEMESTER I: Monetary System

CO 1: Money - A comprehensive understanding about domestic andinternational monetary system.

CO 2: Monetary Standards - Enables to get an exposure about global financialsystem regulation and to decipher the monetary policytransmission mechanism.

CO 3: International Monetary System - To learn about evolution, key stages and principles ofdevelopment of the international monetary system.

CO 4: International Financial System - Facilitate the students to understand the principle andsystem of note issue.

CO 5: Balance of Payment and Balance ofTrade - Enhance their knowledge about foreign trade, currency, conversion and balance of payment.

SEMESTER I: Principles of Business Decision

CO 1: Introduction to Economics - Understand the internal and external decisions to bemade by managers.

CO 2: Public Financial Policy - Analyse demand and supply conditions and assess theposition of a company.

CO 3: Production Function - Design competition strategies according to the natureof products and structures of market environment.

CO 4: Pricing Practices and Strategies - Analyse real world business problems with asystematic theoretical framework.

CO 5: Demand Analysis and ConsumerChoice - Analyse the factors determining economic growth and policies towards economic stability.

SEMESTER I: Technology in Business

CO 1: Introduction to E-Commerce - Describe the role of information technology and
decision support systems in business.

CO 2: Hardware and Software for E-Business - To enable and understand the various knowledgerepresentation methods and different expert systemstructures.

CO 3: Privacy and Technology - To introduce the fundamental principles of computer-based information systems analysis and design.

CO 4: IT Act, 2000(Amendment in2008 and 2018) - To enable knowledge about the spread sheet softwareand understand the logical functions.
CO 5: EDI - To provide the theoretical models used in databasemanagement systems to answer business questions.

SEMESTER I: Advanced Financial Management and Practices
CO 1: Introduction to Finance - Introduction to various basic concepts of Finance,Financial Management and Capital Structure Planning.
CO 2: Investment Decision - Develops in understanding the importance capitalbudgeting decisions and Decisions to be taken forinvestment using different techniques.
CO 3: Risk Analysis in Capital Budgeting - Provides insight in analysing the risk involved incapital budgeting decisions.
CO 4: Corporate Restructuring - Ability to understand the corporate restructuringdecisions using different approaches.
CO 5: Dividend and Working CapitalDecision - A Quick overview of Dividend Decisions withdifferent theories and Techniques for managingworking capital.

SEMESTER I: Knowledge Management and Innovation
CO 1: Introduction to Knowledge – ManagementStudents will be able to understand elements ofknowledge management.
CO 2: Learning Theories - Application in multi-disciplinary areas.
CO 3: Social Nature of Knowledge - Practical Efficiency in decision making process.
CO 4: Knowledge Management - Students will understand about different types ofknowledge management strategies.
CO 5: Learning Organization - Enables to understand learning concepts and its impacton performance.

SEMESTER I: Business Models for Start-ups
CO 1: Introduction to Start Ups - Understandability Business Models.
CO 2: Start-up India - Get know the Schemes of Start-ups of Government.
CO 3: Business Plan - To help create future entrepreneurs.
CO 4: Business Models - Study about the different company business models.
CO 5: Risk in Business Models - Enhances the knowledge of different types of risk andchallenges to be faced in preparation of businessmodels.

SEMESTER II: Contemporary Indian Banking
CO 1: Introduction to Indian Banking - Conversant with the historic development of Indianbanking system and how it has shaped the currentbanking regulatory regime.
CO 2: Reserve Bank of India - Better understanding about the significance and role ofRBI in India with respect to the formulation ofmonetary and credit policy.
CO 3: Non-Performing Asset - Enables the students to develop their understandingand expertise in various matters relating to prudentialnorms and operations of a commercial bank.
CO 4: Capital BASEL Norms - Able to demonstrate progressive learning aboutbanking innovations and online banking.
CO 5: Asset and Liability Management - Enhanced knowledge about banking business andpractices.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

SEMESTER II: Risk Management and Derivatives

CO 1: Introduction to Risk - Identify and categorize the various risks faced by anorganization.

CO 2: Credit Risk Management - Articulate the value of risk management.

CO 3: Market Risk and Operations Risk - Enhance the knowledge about the various credit riskmanagement models.Enable students to provide a realistic assessment ofoperational risk.

CO 4: Basics of Derivative Risks - Learn about the derivative market and their types ofrisks.

CO 5: Futures, Options and Swaps - Explain the trading process of different types of derivatives like futures, options and swaps.

SEMESTER II: Advanced Research methodology

CO 1: Introduction to Research - To familiarize with basic concepts of research andresearch process.

CO 2: Research Topic and Research – Design and develop an understanding on various kinds of research and research design.

CO 3: Scales of Measurement and Data – ProcessingImpart knowledge on analytical skills and meaningfulinterpretation of data sets.

CO 4: Sampling and Hypothesis - Adequate knowledge on Sampling and framing ofhypothesis and testing procedures.

CO 5: Statistical Tests and Software - Provides an insight on planning and drafting of report.To be Expert in the SPSS programme

SEMESTER II: Digital Marketing

CO 1: Introduction to Digital Marketing - Understanding of broad marketing functions inmanagement settings as well as a broad-basedfoundation in finance, accounting and management.

CO 2: Digital Marketing Environment - Understanding of the fundamental marketing concepts,theories and principal areas of marketing.

CO 3: Research and Environment - Understanding the overview business environmentaspects of marketing.

CO 4: Customer Acquisition and Retention - Clarity about concepts, tools necessary to overcomechallenges and issues of marketing in technologicallandscape.

CO 5: Emerging Issues - Develop creative solutions to marketing problems

SEMESTER II: Venture Creation and Development

CO 1: Entrepreneurship - It enables students to know about the basic concept ofmanagement and how to manage 21st Century organizations.

CO 2: Entrepreneurship Development and Leadership - Students can learn the importance of Entrepreneur andEntrepreneurship activity.

CO 3: New Venture Planning - Students can study about the aspects of functionsinvolved in management and theoretically as well aspractically how to manage an activity.

CO 4: Finance in Venture - Enhances students' knowledge on the support(financial supports) given by the government toentrepreneurs to run their business effectively.

CO 5: Issues for Venture - Study the legal issues for formation of business basedon types.

SEMESTER II: Indian Ethos and Leadership

CO 1: Introduction to Indian Ethos - To be followers of Indian Ethos and Values along withLeadership.

CO 2: Work Ethos and Values - To be an Excellent Decision Maker at the CorporateLevel.

CO 3: Leadership - Followers of Corporate Governance.

CO 4: Leadership Development - Learn about the leadership styles and skills.

CO 5: Stress Management - Enables to understand how to overcome stress andbalance work-life.

SEMESTER II: Financial Modelling for Business

CO 1: Introduction to FinancialModelling - Students are able to understand about financialmodelling.

CO 2: Building Financial Models - To understand about business models which are veryessential for modern financial decision.

CO 3: Financial Modelling for Start Ups – Analysis of financial modelsusingExcel.

SEMESTER III: Intellectual Property Rights

CO 1: Introduction to IPR - The students will understand the fundamentals of IPRand Demotic and International IPR.

CO 2: Registration and Laws of IPR - The students will understand IPR rule and regulation and Legal aspects of IPR.

CO 3: Patents and Copy Rights - Students gain knowledge about IPR license,duties, application, and ownerships.

CO 4: Learn about Trademarks.

SEMESTER III: Trade, Logistics and Supply Chain Management

CO 1: Overview of Logistics - Students are able to understand about Introduction theconcepts of Logistics, functions, and contributiontowards economy development.

CO 2: Supply Chain Management: To understand about supply chain management indifferent industries.

CO 3: Element of Logistics and Supply Chain Management: To Understand about Technology in Logistics and SCM in international scenarios.

CO 4: Warehousing, Packaging andMaterial Handling - Students are able to understand about Introduction toAccounting standards issued by ICAI and theirapplications.

CO 5: Supply Chain LogisticsAdministration - To understand about relationship development, management, social performance, and financialperformance.

SEMESTER III: Business Reporting and Practices

CO 1: Business Reporting - On successful completion of the course, the studentswill be able to understand the reporting aspects, accounting standards and framework for financialreporting in development of Standards.

CO 2: Presentation and Disclosure - Students will be able understand about presentationand disclosure about accounting standards.

CO 3: Financial reporting for FinancialInstitutions - Students will understand about financialinstitutions reporting, merchant's banker, and non-bankingfinancial services.

CO 4: Recent trends in financial reportingmodels – Students will understand the different trends in financial statement preparation.

C0 5: Developments in FinancialReporting - Students will understand about voluntaryfinancial reporting.

SEMESTER III: Strategic Cost Management I

CO 1: Costing Strategy - Expose the students to different elements of cost and the costaccounting in strategic planning and management control.

CO 2: Activity Based Costing - Introduce the students to Traditional System, introduction toABC, Kaplan and Coopers approach to ABC.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

CO 3: Life Cycle Costing - Help the students to acquire knowledge on product and projectlife cycle aspects.
CO 4: Just in Time and Kaizen Costing - Enable students to learn JIT, Kaizen and Lean cost managementcosting models.
CO 5: Strategic Cost and PerformanceEvaluation - Expose the students to the internal environment of business andto enable them to formulate strategies relating to cost.

SEMESTER III: Corporate Tax Planning
CO 1: Corporate Income Tax - Integrated view of direct tax and apply the laws tobusiness decisions. Provide the details of variousaspects of corporate tax planning.
CO 2: Tax Planning - Clarity about the various approaches of tax planningand ways to minimize the tax liability within the legalframework.
CO3: Tax Planning and Financial Management Decision - Clarity about the various approaches of tax planning inrespect of capital structure, investment and dividenddecisions.
CO 4: Tax Planning and Managerial Decisions - Help the students to acquire knowledge on managerial
decisions like make or buy, lease or rent.
CO 5: Tax Payments - Enable students to learn TDS, advance payments and refunds.

SEMESTER IV: Analytics in Commerce and Business
CO 1: Introduction to Analytics - Expose the students to importance of analytics in business and application of various tools.
CO 2: Finance Analytics - Introduce the students to analytics in finance with differenttechniques.
CO 3: Marketing Analytics - Help the students to acquire knowledge different techniques inmarketing analytics.
CO 4: HR Analytics - Enable students to learn advanced tools and techniques of HRanalytics.
CO 5: CRM Analytics - Expose the students to the importance of CRM analytics inbusiness environment.

SEMESTER IV: Forensic Accounting and Auditing
CO 1: Forensic Accounting - Expose the students to concept of forensic accounting.
CO 2: Fraud Detection Techniques - Introduce the students to techniques of detecting fraud infinancial statements.
CO 3: Fraud Risk Assessment - Expose the students to different fraud risk assessment based onadvanced techniques.
CO 4: Forensic Audit - Enable students to learn advanced tools and techniques ofForensic auditing.
CO 5: Audit and Investigation - Expose the students to the importance and concept of audit and investigation process.

SEMESTER IV: International Accounting
CO 1: Introduction to InternationalAccounting - Expose the students to overview of international financialstatements.
CO 2: IFRS Overview - Introduce the students to IFRS overview in preparation offinancial statements
CO 3: Special Issues in InternationalAccounting - Help the students to acquire knowledge on special issuesrelated to different types of international risks and its impact onfinancial statements.
CO 4: International Financial StatementAnalysis - Enable students to learn advanced tools and techniques ofInternational Financial Statement Analysis.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

CO 5: Financial Reporting in OtherCountries: Expose the students to the overview of preparation of financialstatements in other countries.

SEMESTER IV: Strategic Cost Management II

CO 1: Pricing Strategies in Decision Making - To expose the students to the externalenvironment of business and to enable them toformulate strategies relating to cost and pricing.

CO 2: Transfer Pricing Expose the students to international transfer pricing.

CO 3: Learning Curve Theory - Expose students to applications of learning curve.

CO 4: Cost of Quality and TQM - Help the students to acquire knowledge on cost ofConformance and non-Conformance, TQM and PRAISE.

CO 5: Balanced Scorecard and Benchmarking - Enable students to learn about attributes to goodperformance measurement system, concept ofbalanced score card and Benchmarking

SEMESTER IV: Goods and Services Tax

CO 1: Goods and Services Tax - Students will be able to understand the GST law inthe country and provide an insight into practicalaspects of GST and equip them to become taxpractitioners.

CO 2: Levy of GST - Expose the students to time and value of supply and composition levy.

CO 3: Input Tax Credit - Expose students to Eligibility and conditions forclaiming credit and Assessment of Tax Liability.

CO 4: Accounts, Returns and Payment underGST - Help the students to acquire knowledge on online process of filing the GST returns.

CO 5: Refund, Audit and Assessment underGST - Help the students to acquire knowledge onAdministration of GST, Assessment and Audit.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

UNDERGRADUATE PROGRAMME

DEPARTMENT OF ENGLISH

PROGRAMME : BBA / BCom - I SEMESTER
TITLE: GENERIC ENGLISH (INSIGHTS I)

CO 1: To help the pupils to be aware of the concept of Unconditional Love (Sonnet 106).
CO 2: To help those in understanding to get empower on the vital social responsibility, sensitivity, and rational thought process on the rights of LGBTs and queer Rights.
CO 3: Students get envision on the African culture and its similarities with Indian terms of Marriagesystem, love relationships, rituals, traditions and customs.
CO 4: It enables the students to understand the concept of competitions, the free rights, freedom,modernism and capitalistic approach.
CO 5: Make sure the students learn the grammatical functions and key elements of LanguageFunction in the process of communication such as LSRW and Language aspects (Workbook)

PROGRAMME: BBA / BCom - IISEMESTER
TITLE: GENERIC ENGLISH (INSIGHTS II)

CO1: Pupils understand the concept of Freedom in true sense having the democratic principles,imperialism, and colonial mind set.
CO2: The students get to know the importance and influence of women in both domestic andprofessional sectors.
CO3: Students empower themselves having the true biographical and auto biographical sketches,where people spread the joy, bliss and pleasant moments along with deep trouble and agony.
CO4: Students get aware on the concept of called "the true beauty is joy forever "by John Keats.
CO5: The essay helps to students to understand the various social process enforced by the diversesocial institutions.
CO6: Ensure the students learn the grammatical functions and key elements of LanguageFunction in the process of communication such as LSRW and Language aspects (Workbook)

PROGRAMME: BBA / BCom - III SEMESTER
TITLE: GENERIC ENGLISH (ENVISION III)

CO1: Pupils understand the concept of Drama, Dance like a man gives an idea of genderdiscrimination, identity crisis Generation Gap.
CO 2: Literary component – Persuasive speeches – makes the students to understand the differentconcepts from different field achievers. It also inculcates the sporting spirit, human and ethicalvalues.
CO 3: To familiarize the students with Business and Commercial Writing skills.

PROGRAMME: BBA / BCom - IV SEMESTER
TITLE: GENERIC ENGLISH (ENVISION IV)

CO1: Pupils will be introduced to a Novel THE FINANCIAL EXPERT by an Eminent Indian Writer R. KNarayan. It gives a sense of Indianness provided with his own taste, flavour and recognition ofCultural inheritance.
CO2: Literary component – Persuasive speeches – makes the students to understand the differentconcepts from different field achievers. It also inculcates the sporting spirit, human and ethicalvalues.
CO 3: To familiarize the students with Business and Commercial Writing skills.

PROGRAMME : BCA / BSc- I SEMESTER
TITLE: GENERIC ENGLISH (IMPRINTS 1)
CO1 : Students will understand the value of freedom, free speech, and Democracy
CO2: The GOLDEN DREAM & MONKEY'S PAW – Students will learn the art of story-telling and Powerof Imagination.
CO3: Criticize and raise voice against bureaucracy and call for action when democracy is threatened.
CO4: WORKBOOK – Develop LSRW Skills.

PROGRAMME: BCA / BSc - II SEMESTER
TITLE: GENERIC ENGLISH (IMPRINTS II)
CO1: (BRITAN DOESOWN REPERATIONS – Dr. Shashi Tharoor, SHOOTING AN ELEPHANT-GeorgeOrwell, A QUESTION OF ENGLISH – Ramachandra Guha)
Comprehend the European Imperialism and Colonialism through the lens of Indian context andnarrative, the drastic uphold of English language and education on indigenous culture and society.
CO2: Get an exposure of Modern Media Exposure and its advantages and disadvantages in the globalspectrum.
CO3: BANKERS ARE LIKE ANYBODY ELSE EXCEPT RICHER-OGDEN NASH
Comprehend the banking sector's rules and regulations.
CO4: A MID SUMMER' S NIGHT DREAM – William Shakespeare
HAYAVADANA- Girish Karnad
Explore the aesthetic aspects in plays through the lens of humour and appreciate the Comedy of Errors.
CO5: WORK BOOK: Make sure the pupil to learn the grammatical functions and key elements of Language Function in the process of communication such as LSRW and Language aspects)

PROGRAMME: BCA / BSc- III SEMESTER
TITLE: GENERIC ENGLISH (LINGUA FRANCA- III)
CO1: Pupils understand the concept of Play, The Life of Galileo by Bertolt Brecht. This playemphasizes on the conflict between Science and Religious aspects.
CO 2: Literary component – Persuasive speeches of Dr. B.R Ambedkar,Dr.A P J Abdul Kalam, MalaYusuf, Sachin Tendulkar, Chief Seattle makes the students to understand the different concepts fromdifferent field achievers. It also inculcates the sporting spirit, human and ethical values.
CO 3: To familiarize the students with presentation skills, Business and Commercial Writing skills.

PROGRAMME: BCA / BSc - IV SEMESTER
TITLE: GENERIC ENGLISH (LINGUA FRANCA -IV)
CO1: Pupils understand the novel Siddhartha by Hermenn Hesse
CO2: Literary component – poetry – Caged bird – comprehends the concept of freedom from theoppression
CO 3: to familiarize the motivation speeches through Ted Talks
CO 4: To familiarizes the students with presentation skills, Business and Commercial Writing skills.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF SANSKRIT

PROGRAMMES: BBA/ BCA/ BCom/ BSc

COURSE: I SEMESTER

Poetry

CO 1: To comprehend literary texts of ancient poetry written by great Poet.
CO 2: To inculcate the ethical values of life
CO 3: To emphasize a narrative resurrection of primeval reality through

Mythology

CO 4: To relate thoughts with the given literature.
CO 5: To develop skills in Sanskrit grammar and comprehension in Sanskrit.

COURSE: II SEMESTER

Prose

CO 1: To help students learn the basics and fundamental concepts of prose.
CO 2: To help students know the different areas of prose genres through lessons.
CO 3: To be acquainted with the glossary of Sanskrit Terminologies.
CO 4: To emphasize the skills in Sanskrit Grammar and translation of Sanskritpassages into Kannada or English.
CO-5: To equip students with skills to meet the language challenges.

COURSE: III SEMESTER

Title: ChampuKavyas

CO 1: To comprehend literature of ancient Champu literature written bydifferent authors.
CO 2: To help students know the different areas of Champu kavyas.
CO 3: To gain knowledge about science in Sanskrit
CO 4: To help students know the different areas of Arthashastra.
CO 5: To equip students with skills to meet the challenges.

COURSE: III SEMESTER

Drama

CO 1: To classify different forms and styles used in Sanskrit drama.
CO 2: To critically evaluate drama.
CO 3: To sanitize students towards the issues happening in and around students
CO 4: To help students know the different areas of dramatic literature.
CO 5: To equip students with simple Sanskrit Grammar.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF KANNADA

PROGRAMME: BSc
COURSE: I SEMESTER
TITLE: VignanaSowradha

CO1: **Nadu-Nudi Thought**: The wealth and glory of the Kannada Nation and themanner in which the Kannada Language struggled for its existence to be explained.
CO 2: **Land**: Toexplain theimportance ofhumans in the protection of nature. If humans destroy nature, it will be explained that humanswill be the cause of future natural calamities.
CO 3:**Scientific Temperament**: Thoughts are seen to eliminate superstitions.
CO 4: **Creativity**: Hidden dynamism and achievements as seen in commonpeople.

PROGRAMME: BSc
COURSE: II SEMESTER
TITLE: VignanaSowradha

CO1: **Art of Living**: Life is a constant battle where the extinction of one leads to the survival of another, but it is important for man to lead his life to excellence.
CO2: **Dream**: Everyone who sleeps has dreamed one or the other someunspeakable experiences haunt us in the form of dreams
CO3:**Rain**: Due to severe drought and famine,the life of thehuman being is pushed into anxiety. The effort of the human beings to find a solutionto this nature is only for his own tillage.
CO4: **Complex**: How global science technologies influence at the local level. The importance of forest resources

PROGRAMME: BSc
COURSE: III SEMESTER
TITLE: VignanaSowradha

CO 1: **Humanity**: There have been complications in India's social stratificationsince time immemorial. Discrimination against a communityon the basis of color istimeless. Untouchability is like a trail that affects a person from his birth till hisdeath.
CO2:**Travel**: Traveling or trekking does not only increase peace of mind.Instead, the trip to any region becomes a unique experience of life. Also, itbecomes a study of another culture.
CO3:**Thought revolution**: Caste is like a man's foreskin. It covers all aspects ofhis life. It is also important to think rationally about this.
CO4:**Complex**: Media is one of the most important pillars of democracy. Withtheir birth and development, the phenomena spreading at the level of the countryand abroad are recordable. The presence of media is important in the technologicaldevelopment of a country.

PROGRAMME: BSc
COURSE: IV SEMESTER
TITLE: VignanaSowradha

CO1:**Oppressed World**:The way they are treated in the social system becausethey are Dalits, the status accorded to them is against social justice. Dalits continueto struggle for their dignity.
CO2: **Tolerance**: The quality of tolerance is tolerating other people's ideas andother religions. Coexistence is possible when we learn to respect and tolerate. Suchwisdom makes our lives bearable.
CO3: **Life of the common man**: The way of living of common people is great,no matter what the season is, living as if it is great is the characteristic of thecommon man who accepts and embraces what he finds in life.
CO4: **Complexity**: Scientists reveal their discoveries according to the context oftime but recent scientists are against this trend.

PROGRAMME: BCA
COURSE: I SEMESTER
TITLE: Ganaka Sowrabha

CO1:**Nadu-Nudi Thought**: The features of Kannada language fromKavirajamarga till today; challenges faced by Kannada language to maintain itsidentity.

CO2: **Akasha**: An inseparable connection from childhood with the Sky, Moon,and awareness of the importance of celestial bodies and their function

CO3: **Adolescence**: Youth should be energetic during youth. We will be toldabout the mistakes we make in our youth and the problems we will face if we don't correct them.

CO4:**Complex**:Intimacy that should be present in marriage. If there is a goaland passion, achievement can be easily achieved. To create awareness about thatwe need to prepare to face the development of the country.

PROGRAMME: BCA
COURSE: II SEMESTER
TITLE: Ganaka Sowrabha

CO1: **Commerce**: Kannada has a history of thousands of years, there is a fear oflosing its original form due to the wave of new industries due to modernization andmechanization.

CO2: **Technology**: In ancient times, technology was used in their daily life, butonly the way of using it is different from today's modern youth.

CO3: **Marriage**: It is one of the Indian social institutions, marriage is an integralpart of human existence where men and women live in harmony with each other tomaintain the health of the society.

CO4: **Complex**: The status of women in patriarchal society, the impermanenceof human life, the role of globalization in cultural shifts, and the relationship betweenscience and folk literature is presented.

PROGRAMME: BCA
COURSE: III SEMESTER
TITLE: Ganaka Sowrabha

CO1: **Daily routine**: There is a natural life beyond the arguments that arise inthe world. The process of living there is great. There is a quality of endurance inthe daily routines that a race develops over hundreds of years. There are chancesthat the daily routine become monotonous and boring.

CO2: **Freedom**: The freedom that this country has got should be used effectivelyas per the original intention of the constitution. Even though there are many peoplewho are short-sighted about his, the exemplary demonstrations of how freedom canbe misused are taking place before our eyes. Even so, freedom along with socialjustice should be enjoyed by even the most marginalized people of the society.

CO3:**Equality**: Human heart is the basic foundation of culture where love,mercy, tolerance, religious tolerance, equality is filled only when life becomesbearable. However, due to the influence of today's modernization, the lifestyle andpolicies of Indians have changed. All human relationships are becomingbusinesses. The dark side of communalism is emerging. Efforts should be made topreserve and develop values and culture in this context.

CO4: **Complex**: Adolescence is the most intense period in human development.Adolescents are also very curious about psycho-physical changes and fear-anxiety.Proper understanding information is required during this period. It is veryimportant to create awareness about common problems and solutions amongteenagers.

PROGRAMME: BCA
COURSE: IV SEMESTER
TITLE: Ganaka Sowrabha

CO1: **Civilization**: Civilization and technology have an inextricable relationship,these are constantly undergoing change from time to time, this change is notexclusive to the field of education, in this

background, as it covers the humancivilization, there are some changes in the environment and his circumstances aswell.

CO2: **Development**: Today the entire earth is suffering from global warming dueto the excessive desire of man, so he needs to put aside all his egos and getinvolved in the protection of the earth.

CO3: **Compassion**: The extreme rains and droughts on earth are of a terriblenature and the heart-felt experiences of human beings who have fought andsurvived both of these are the punishments given by the environment to maintainthe balance of nature.

CO4: **Complexity**: If the anxiety in the mind of the youth during the youth leadsto irresponsible behaviour on the one hand, it is a special thing that many Mahatmasare still on this earth who dedicate their lives for the benefit of others.

PROGRAMME: BCom
COURSE: I SEMESTER
TITLE: Vanijya Sowrabha

CO1: **Nadu – Nudi thought**: In addition to unveiling the culture of the KannadaNation, it also fosters love for the Language.

CO2: **Culture**: As unity in diversity, humanity, humaneness, tolerance andtolerance should be learned and made aware to live in the Society.

CO3:**Globalization**: The relationship between countries in the context of globalization. Change in Society and Human beings.

CO4: **Creative**: Folk tale, importance of Education, Focus on goal to achieveawareness of importance of education.

PROGRAMME: BCom
COURSE: II SEMESTER
TITLE: Vanijya Sowrabha

CO1: **Nityotsava**: Although beauty can be found in some things seen in nature inhumans and other creatures, there is a difference in this too, so the actions andreactions of the mind are very important in perceiving beauty.

CO2: **Indigenism**: Indigenism represents the way of life of local thoughts,language, thought, food, dress, art, literature, medicine, which is a part ofeveryone's life. It reflects the overall culture. Local thought, language, literatureand life were constantly influenced by external thoughts and ideas can beidentified.

CO3: **Bhakti**: Is a mental state that helps us to do our duties with love. In thename of Bhakti, exploitation and atrocities are taking place. There is a group ofexploiters in the society who are abused by ignorance, superstition andhelplessness. It is not a show that Bhakti is not a show. Lack of awareness is seeneverywhere.

CO4: **Creativity or Complexity**: Complexity reflects Shetty's profoundthoughts if creativity is to innovate rather than to act rigidly or mechanically.

PROGRAMME: BCom
COURSE: III SEMESTER
TITLE: Vanijya Sowrabha

CO1: **Cinema /Entertainment**: Some passages from ancient poerty areentertainingly expressive, progressive attitudes of national leaders, internationallyacclaimed novels and story- based movies discuss how social change can beachieved.

CO2:**Market**: The fact that transformation is the law of the world will beinformed through the subtle changes in our country's market, culture and lifestylesin the background of liberalization, privatization and globalization

Principal
SJR College For Wome
Rajajinagar, Bengaluru-1

CO3:**Gender Equality**: The way in which a woman overcomes all her internalsufferings and builds her own self – respecting life, her contribution in the processof building an equal society is explained.
CO4: **Complex**: Integrated use of vital water resources some indirect factsrelated to religious superiority. The way experiences are created into proverbs, howthe ideas of local intellectuals become solutions to global problems are told.

PROGRAMME: BCom
COURSE: IV SEMESTER
TITLE: Vanijya Sowrabha
CO1: **Sea**: In some situations of life, many thoughts, principles and doctrinesflood our head like rivers, then they should be placed on the bed of enlightenedthinking and accepted like sea.
CO2: **Coexistence**: As important as the coexistence between human beings is,the same importance should be raised between human beings and other naturalcreatures in nature such as forest animals, birds and other creatures becausenothing is superior or inferior in this creation.
CO3: **Death**: Death is the last stage of human life from which no living creaturecan escape so one should always do good things while living and death should be celebrated as Mahanavami festival.
CO 4:**Complexity**:Citizens especially the youth need to be open minded andrespect each other as well as promote equality.

PROGRAMME: BBA
COURSE: I SEMESTER
TITLE: Nirvahana Sowrabha
CO1: **Nadu – Nudi Thought**: To create awareness about the greatness of theKannada Nation, the patriotism of the Kannadigas, the struggle for language-wisedivision of the state, the use of the language and its history.
CO2: **Modernity**: As change is the natural law of man, be it human beingsaccording to time, use of things, the invention of new technologies adapts to them.
CO3: **Family**: Man is a social being. It is to live with one's ups and downs, withlove and harmony.
CO4:**Complex/Creative**: Introduction to accomplished pros in folk tales,drawings, creative writing and awareness of qualifications and values of a writer.

PROGRAMME: BBA
COURSE: II SEMESTER
TITLE: Nirvahana Sowrabha
CO1: **Kayaka**: Every job has its own Udupi respect All the Kayakas arerecognized as a part of the culture of our country It is a specialty of our society torecognize some of the Kayakas in the background.
CO2: **Harmony**: India is the only land full of cultural diversity in the world,there are thousands of languages, castes and religions nearby. In such a country,living in harmony with all religions is necessary and even inevitable for the overall
good of the country.
CO3: **Antahkarana**: A term of Sankhyadarshan, it is related to the innercompassion of human being, when the inner being should be full of kindness, thereshould be just compassion towards all living beings.
CO4:**Complexity**: There must be the ability to create something newthroughoriginality without anyone's influence.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PROGRAMME: BBA
COURSE: III SEMESTER
TITLE: Nirvahana Sowrabha

CO1: **Society**: To identify the changes taking place in the social hierarchicalsystem from the point of view of bureaucracy, rich class even after independence.

CO2:**Rationality**: Modern people can find true humanity by transforming theirthoughts into rationality instead of looking for humanity in God's Temple, Church,Mosque.

CO3:**Life and Art**: Man's way of dealing with his happiness, sorrow, pain,sadness, tiredness, weariness etc., is also an art. It plays a very important role inbonding relationships.

CO4:**Complex**: Along with the basic purpose of folktales, it conveys the ideasthat selfishness is the main cause of complete collapse of values in business,commerce, industry. Also Wikipedia is very important for the survival of KannadaLanguage, inculcation of rational consciousness along with condemnation ofsuperstitions.

PROGRAMME: BBA
COURSE: IV SEMESTER
TITLE: Nirvahana Sowrabha

CO1: **War**: After war or conflicts, their effects continue for many generations.This modern world has become a situation of living in fear of war.

CO2: **Nationalism**: The over-respecting concerns towards our country is in asense nationalism whereby it is the duty of Indian citizens to strengthen the countryeconomically, socially, culturally and politically.

CO3: **Peace**: The atmosphere of the whole world is being polluted by wars andconflicts. Peace is necessary for a country to be strong in every way. It applies toeveryone.

CO4: **Complex**: Cheating, trust, betrayal are like webs covering all aspects ofhuman life, which hinder the society from walking on the right path.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF PHYSICS

PROGRAMME: BSc
COURSE: I SEMESTER
TITLE: Phy-DSCT1: Mechanics and Properties of Matter

CO 1: Fixing units, tabulation of observations, analysis of data(graphical/analytical).
CO 2: Accuracy of measurement and sources of errors, importance ofsignificant figures.
CO 3: Knowledge of how g can be determined experimentally and derivesatisfaction.
CO 4: Understanding the difference between simple and torsionalpendulum and their usage
CO 5: Determination of various physical parameters.
CO 6: Knowledge of how various elastic moduli can be determined.
CO 7: Measuring surface tension and viscosity and appreciate the methodsadopted.
CO 8: Hands on experience of different equipment.

PROGRAMME: BSc
COURSE: II SEMESTER
TITLE: DSCT2: Electricity and Magnetism

CO 1: Demonstrate Gauss law, Coulomb's law for the electric field, andapply it to systems of point charges as well as line, surface, andvolume distributions of charges.
CO 2: Explain and differentiate the vector (electric fields, Coulomb's law)and scalar (electric potential, electric potential energy) formalisms ofelectrostatics.
CO 3: Apply Gauss's law of electrostatics to solve a variety of problems.
CO 4: Describe the magnetic field produced by magnetic dipoles andelectric currents.
CO 5: Explain Faraday-Lenz and Maxwell laws to articulate the relationshipbetween electric and magnetic fields.
CO 6: Describe how magnetism is produced and list examples where itseffects are observed.
CO 7: Apply Kirchhoff's rules to analyze AC circuits consisting of paralleland/or series combinations of voltage sources and resistors and todescribe the graphical relationship of resistance, capacitor andinductor.
CO 8: Apply various network theorems such as Superposition, Thevenin,Norton, Reciprocity, Maximum Power Transfer, etc. and theirapplications in electronics, electrical circuit analysis, and electricalmachines.

PROGRAMME: BSc
COURSE: III SEMESTER
TITLE: DSCT3: Wave Motion and Optics

CO 1: Identify different types of waves by looking into their characteristics.Explain the difference between plane and spherical waves,longitudinal and transverse waves and give their characteristics.
CO 2: Write down an equation for the progressive wave in its differentialform. Obtain the relation between particle and wave velocity.
CO 3: Obtain an expression for intensity of progressive waves.
CO 4: Obtain Newton's formula for the velocity of sound and discuss theFactorsfor which sound velocity is dependent.
CO 5: Apply the Laplace's correction to the equation of motion of aprogressive wave.With examples explain ripple and gravity waves.
CO 6: Give the theory of superposition of two linear waves having equalfrequencies and different frequencies.Discuss the formation of different Lissajous figures under differentconditions of amplitude and frequency when they superimposeperpendicularly. Give some applications of an Lissajous figures.

CO 7: Students must be able to solve Higher Order problems.

PROGRAMME: BSc
COURSE: IV SEMESTER
TITLE: DSCT4: Thermal Physics & Electronics

CO 1: Apply the laws of thermodynamics and analyze the thermal system.
CO 2: Apply the laws of kinetic theory and radiation laws to the ideal andpractical thermodynamics systems through derived thermodynamicrelations.
CO 3: Use the concepts of semiconductors to describe differentSemiconductor devices such as diode transistors, BJT, FET etc andexplain their functioning.
CO 4: Explain the functioning of OP-AMPS and use them as the buildingblocks of logic gates.
CO 5: Give the use of logic gates using different theorems of BooleanAlgebra followed by logic circuits.

PROGRAMME: BSc
COURSE: V SEMESTER
TITLE: DSCT5: Classical Mechanics -I and Quantum Mechanics-I
CO 1: Inertial and non-inertial frames of reference.
CO 2: Apply the Lorentz transformations to transform velocities in specialrelativity.
CO 3: Calculate the relativistic Doppler effect.
CO 4: Limitations of classical physics.
CO 5: Physical significance of wave function: expectation values andprobability.
CO 6: Understanding uncertainty relation.
CO 7: Examples of exactly solvable potentials.
CO 8: Importance of commutation relations.

PROGRAMME: BSc
COURSE: V SEMESTER
TITLE: DSCT6: Elements of Atomic, Molecular and Laser Physics
CO 1: Description of atomic properties using basic atomic models.
CO 2: Interpretation of atomic spectra of elements using vector atommodel.
CO 3: Interpretation of molecular spectra of compounds using basics ofmolecular physics.
CO 4: Explanation of laser systems and their applications in various fields.

PROGRAMME: BSc
COURSE: V SEMESTER
TITLE: DSCT7: Elements of Condensed Matter & Nuclear Physics
CO 1: Elemental Crystallography.
CO 2: Knowledge about X-rays and Diffraction of X-rays.
CO 3: Discussion of Classical and Quantum free electron theoryincluding their limitations.
CO 4: Explanation the basic properties of nucleus.
CO 5: Understanding the concepts of binding energy and binding energyper nucleon v/s mass number graph.
CO 6: Explanation of alpha, beta and gamma decays.
CO 7: Study of interaction of gamma radiation with matter byphotoelectric effect, Compton scattering and pair production.
CO 8: Study of different nuclear detectors such as ionization chamber,Geiger-Mueller counter,
CO 9: Scintillation detectors, photo-multiplier tube and semiconductordetectors.

PROGRAMME: BSc
COURSE: VI SEMESTER
TITLE: DSCT8: Electronic Instrumentation & Sensors

CO 1: Identify different types of tests and measuring instrumentsused in practice and understand their basic working principles.

CO 2: Get hands on training in wiring a circuit, soldering, making ameasurement using an electronic circuit used ininstrumentation.

CO 3: Have an understanding of the basic electronic components viz.,resistors, capacitors, inductors, discrete and integrated circuits,colour codes, values and pin diagram, their practical use.

CO 4: Understanding of the measurement of voltage, current,resistance value, identification of the terminals of a transistorand ICs.

CO 5: Identify and understand the different types of transducers andsensors used in robust and hand-held instruments.

CO 6: Understand and give a mathematical treatment of the workingof rectifiers, filter, data converters and different types oftransducers.

CO 7: Connect the concepts learnt in the course to their practical usein daily life.

CO 8: Develop basic hands-on skills in the usage of oscilloscopes,multimeters, rectifiers, amplifiers,oscillators and high voltage probes, generators and digitalmeters.

CO 9: Servicing of simple faults of domestic appliances: Iron box,immersion heater, fan, hot plate, battery charger, emergencylamp and the like.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF CHEMISTRY

PROGRAMME: BSc
COURSE: I SEMESTER

CO1:**Mathematical Concepts for Chemistry**

Students will understand mathematical parameters like logarithm, derivation, integration,probability, graph representation etc required from chemistry point of view for solvingvarious problems in chemistry.

CO2:**Gaseous state**

Students will learn about how gases can be governed by different gas laws, how the
Boltzmann distribution law can be used to calculate velocity of gases, curves,equation, problems on different types of problems like rms velocity, most probablevelocity, average velocity, how gases can be liquefied by Joule – Thomson effect,methods of liquefaction of air.

CO3:**Photochemistry**

Students will learn about different laws governing photochemistry, aboutphotochemical reactions and quantum yield calculation, theory behindFluorescence, phosphorescence, luminescence, bioluminescence , study about Beer-Lambert's law and its applications in colorimetric estimations.

CO4:**Liquids and Solutions**

Students here will study about properties of liquids, parachor and itsapplications, Liquid mixtures, distribution law, experimental determination ofmolecular mass of a solute by different methods using above principles.

CO5:**Periodic Table and Periodic properties**

To make students understand the modern periodic table which stands as the backboneinunderstanding Chemistry and the periodic properties like Atomic and Ionic size. Get studentsto understand SBlock elements indetail.

CO6:**Analytical Chemistry**

Students study about types of errors in experimental determination in a lab, how tominimize it, significant figures in calculations, Equivalent weight of acids, bases, salts,oxidising and reducing agents, Methods of expressing concentration. These conceptsarevery important as chemist working in a laboratory.

CO7:**Basic concepts in organic chemistry**

To make student understand different organic compounds with respect to the functionalgroupand become eligible to call the name of the organic compounds scientifically,Students become eligible to study the subject initially by understanding the basic thingsforchemical reactions i.e. Substrate and Reagents Types of reagents Electrophilic andNucleophilic, Homolytic and heterolytic fission. Electron mobility Inductive effect etc.

CO8:**Aliphatic Hydrocarbons, Alkanes, Cycoalkanes, Alkenes, Dienes, Alkynes**

Students will gain knowledge about many of the daily used basic organic materials inwhich are majority of them are hydrocarbons. Therefore, this topic makes the conceptregarding their formation, basics of the alkenes and alkynes etc with respect to thechemical point of view.

PROGRAMME: BSc
COURSE: II SEMESTER

CO 1:**Quantum Mechanics and Atomic Structure**

Students will gain an understanding of:

a. the limitations of classical mechanics at molecular length scales
b. the differences between classical and quantum mechanics
c. the connection of quantum mechanical operators to observables
d. probabilities, amplitudes, averages, expectation values, and observables
e. how molecular phenomena can be related to model problems

CO 2:**Chemical Bonding**

Students learn about types of bonding, lattice energy calculation, hybridization& VSEPRtheory and determination of shapes of some molecules, properties of solids, and weakinteractions in molecules. These are very essential to know about chemical structure,reactions, properties of substances.

CO 3: **Silicates**

Students learn about silicates, noble gases and study D and F block elements

CO 4: **Aromatic Hydrocarbons**

Students will study about conditions for Aromaticity, Aromatic hydrocarbons, structureand reaction mechanism of benzene and their derivatives. How it will be used inindustries for manufacturing other aromatic derivatives and their uses.

CO 5:**Organic halogen compounds**

Students learn about alkyl halides, aryl halides preparations, chemical reactionsmechanisms and physical properties.

PROGRAMME: BSc

COURSE: III SEMESTER

CO1:**Chemical Kinetics**

Students will gain an understanding of:

a. the application of mathematical tools to calculate thermodynamic and kineticproperties

b. the relationship between microscopic properties of molecules with macroscopicthermodynamic observables

c. the derivation of rate equations from mechanistic data

d. the use of simple models for predictive understanding of physical phenomenaassociated to chemical thermodynamics and kinetics

e. the limitations and uses of models for the solution of applied problems involvingchemical thermodynamic and kinetics

CO2:**Thermodynamics**

Students get the knowledge about I law of Thermodynamics, Spontaneous and non-spontaneous processes, second law of thermodynamics, Heat engine-Carnot's cycle,efficiency of a heat engine, entropy, Phase transitions and problem solving.

CO3:**Thermodynamics II**

Students learn about Gibb's free energy, equation, work function, Van'toff reactionisotherm, ClausiusClapeyron equation, Nernst equation, III law of thermodynamics,residual entropy.

CO4:**Surface chemistry**

Students learn and study about how daily routine thing used for its surface utilization andtherefore understanding the surface phenomenon's like Adsorption, mechanism ofadsorption, factors affecting Adsorption, difference between adsorption and absorptiontypes of adsorptions is important etc.

CO5:**Organic and Inorganic Polymers**

Students get knowledge about types of polymerisations, with examples, molecularmassdetermination, preparation, structure, applications of some polymers are discussed andhow inorganic polymers are better industrially compared to organic polymers.

CO6:**Compounds of some Non-metals**

Students learn about Boron, halogens and their compounds, industrial manufacture ofcompounds

CO7:**Metallurgy**

Importance of Ellingham diagram in choosing reducing agents in extraction of metals.Industrial Extraction of some metals from their ores are studied.

CO8:**Alcohols and Thiols, Phenols, Ethers and Epoxides, Organometallic compounds**

Students will study about Alcohols, Glycols, Glycerol, Thiols, Grignard reagents,variouschemical reactions with mechanisms, uses Classification, acidic nature, some importantchemical reaction mechanisms, Industrial applications of some compounds.

CO9:**Fertilizers**

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

Students get knowledge about essential plant nutrients, classification of fertilizers, manufacture of some fertilizers and fertilizer industries in India serving farmers and
importance in food security of the nation.

PROGRAMME: BSc
COURSE: IV SEMESTER

CO1:**Phase Equilibria**

Students learn how to apply Phase rule and its applications in various phase systemswhich are in equilibrium at different conditions. Phase diagrams of various systems helpstudents in analytical skills, condensed phase rule, desilverisation of lead by Pattinson'sprocess, freezing mixtures, etc.

CO 2:**Solid state**

Students study about Laws of crystallography, crystal systems, Weiss indices in a crystal tosolve structural problems of solids, x ray diffraction how it helps in structuredetermination of solids. Liquid crystals types, and applications, superconducting solidsand applications. This is very important in structure determination point of view ofchemist.

CO 3: **Water Technology**

Students will learn about sources, importance, purification methods and preservation ofwaterCO-13 Nuclear and Radiochemistry.Students will gain an understanding of:

a. the fundamentals of nuclear decay
b. the properties of an atomic nucleus that make it unstable and undergo nucleardecay
c. how to use the Chart of the Nuclides
d. the proper methods to detect various types of ionizing radiation
e. the theoretical and practical principles behind liquid scintillation spectrometry
f. the statistical methods behind nuclear instrumentation for detection of ionizingradiation
g. how to use radiotracer methodology in the laboratory.
h. how radiopharmaceuticals are produced for the treatment of disease andunderstand why different radioisotopes are chosen to treat different diseases

CO 4:**Powder metallurgy**

Students study about how powder metallurgy helps in shaping of new products withdesired physical and chemical properties in low-cost superior.

CO 5: **Steel**

Students will understand the properties of steel and the significance of temperature onthe steel. This knowledge will help them to work efficiently in various steel and ironindustries.

CO6: **Aldehydes and Ketones, Carboxylic acids and their derivatives, Tautomerism andEnolates**

Students will study about the properties and preparation of aldehydes and ketones,carboxylic acids, which will help students to apply knowledge in research field and variousproduction industries. Properties of enolates and this helps in selecting proper reagent asnucleophile in various organic reactions in their research.

CO 7:**Environmental Chemistry**

Students will study about Impact of human activities on Environment and preventivemeasures to protect our planet.

PROGRAMME: BSc
COURSE: V SEMESTER

CO1:**Stereochemistry**

Students will be expected to gain knowledge basic concept of symmetry and chirality inthe molecules, their spatial arrangement, properties and reactivity of stereoisomers, importance of the configuration of chiral organic compounds which will be useful in the pharmaceutical industry where chemist works on stereo selective synthesis ofcompounds.

CO 2: **Amines, Heterocyclic compounds**

Students get knowledge about the reactions of amines and diamines. The student will getfamiliar with particular properties and reactions for the most important heterocycles aswell as different systems of nomenclature. The course aims at giving a fundamentaltheoretical understanding of heterocyclic chemistry, including alternative generalmethods for ring synthesis and application of such methods for the preparation of specificgroups of heterocyclic systems.

CO 3:**Chemistry of Natural Products**

Students get an introduction to the broad field of Natural Products Chemistry byreviewing the major classes of Natural Products compounds. knowledge on theidentification and chemistry of natural products. knowledge on the identification andbiosynthesis of the various classes of natural products such as(terpenes, steroids,alkaloids and flavonoids) Acquirement skills to extraction, isolate and purify simpleproducts that are derived from plants

CO 4: **Spectroscopy of Organic compounds, UV-Visible spectroscopy, NMR spectroscopy**

Students will be able to recognize different regions for different spectroscopy.Apply this knowledge in Characterization Techniques of various chemical compound andpharmaceutical drugs in research field.

CO 5:**Industrial Organic chemistry, Synthetic dyes, Drugs, Introduction to Green Chemistry**

Students will be enriched with the theoretical knowledge of Drugs and Dyes synthesiswhich can be practically applied efficiently in various drugs and dyes Industries.Green Chemistry principles will help in reducing the waste and harm caused toenvironment.

PROGRAMME: BSc

COURSE: VI SEMESTER

CO 1:**Electrochemistry I**

Students learn about conductance, conductometric titrations, Transport numbers:determination method. Causes of abnormal transport numbers observed in certainsystems. Ionic mobility, Arrhenius theory, Debye-Huckell theory, Galvanic cell, Nernstequation for single electrode potential (free energy concept). Problems solving skills.

CO 2:**Electrochemistry II**

Students learn about Weston-cadmium cell: Determination of emf of a cell bycompensation method. Liquid junction potentials, Types of electrodes, determination ofpH, concentration cells, Redox electrodes, emf of redox electrodes and problem-solvingskills.

CO 3:**Ionic equilibria**

Students will get knowledge about Hydrolysis of salts, Kh, effect of temperature anddilution on degree of hydrolysis, PH of salt solutions, common ion effect, buffers and itsworking and applications, problem solving skills, principle behind qualitative analysis,theory of indicators.

CO 4:**Physical properties and Molecular structures**

Students learn about Polarisation and orientation of dipoles in an electric field, dipolemoment, induced dipole moment, structure of molecules based on dipole moment,magnetic properties, electrical properties of solids.

CO 5:**Chemical Spectroscopy**

Students learn about Electromagnetic spectrum, Born-Oppenheimer approximation,rotational spectra of diatomic molecules. Vibrational spectroscopy, vibrational modes ofCO_2, H_2O, problem solving

CO 6: **Raman spectroscopy, electronic spectroscopy**

Students learn about Concept of Polarisability, advantages of Raman spectra over IRspectroscopy, electronic spectroscopy selection rules, Franck-Condon principle.

CO 7: **Electroanalytical Methods**

Students learn about Voltammetry at a dropping mercury electrode, types of current,Ikavic equation, cyclic voltammetry, determination of diffusion coefficient etc., instructure determination of compounds

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

PROGRAMME: BSc

COURSE: VI SEMESTER - Paper VII

CO 1:**Coordination and Organometallic Compounds I**

Students study about Basics of coordination compounds, Werner's theory of structure andbonding, Valence bond theory, crystal field theory to explain structure and bonding incoordination compounds, EAN rule, magnetic properties and how it can be determinedfor a compound, isomerism, organometallic compounds, ligands, classification, synthesisand structure of some compounds.

CO2:**Coordination and Organometallic Compounds II**

Students study about Metal carbonyls, eighteen electron rule, applications, how cis platin is used in cancer therapy, sodium salt of EDTA in heavy metal poisoning, Wilkinson's catalystin alkene hydrogenation, Monsanto acetic acid process.

CO3:**Industrial Materials**

Students study about Refractories, Glass, Ceramics, Cement, manufacture, propertiesand uses Paints and Varnishes, Fuels, Explosives, Propellants, types, properties andapplications

CO4:**Bioinorganic Chemistry**

Students know the Importance of inorganic elements in biological systems, mechanism ofhaemoglobin oxygen transport and its structure, vitamin B12 structure, diseases due totheir deficiencies and ways to overcome

CO5:**Chemistry of Newer materials**

Studentsstudy about Conducting polymers, Super conductors, Fullerenes, Nanomaterials

PROGRAMME: BSc

COURSE: VI SEMESTER - Paper VIII

CO 1:**INTRODUCTION TO BIOCHEMSITRY**

Students study about contributions of various scientists for development of Biochemistry

CO 2:**CARBOHYDRATES, LIPIDS**

Students study about Amino sugars, Sugar acids, Sugar phosphates, Structure andbiological importance of oligosaccharides, Polysaccharides Fatty acids, Triglycerides,Phosphoglycerates, Cholesterol, Sphingolipids

CO 3:**PROTEINS, NUCLEIC ACIDS**

Students study about α-amino acids, Levels of organizations of Protein, Denaturationandrenaturation, Classification of proteins Types, Structure of DNA

CO 4:**HORMONES, ENZYMES**

Students study about Classification, with functions, insulin role, mediators in harmonicaction. Classification of enzymes, Enzyme substrate interaction, Enzyme kinetics,Allosteric enzymes, Enzyme inhibitions

CO 5: **BIOLOGICAL OXIDATION**

Students study about Bioenergetics, High energy phosphates, biological oxidation

CO 6:**BIOCHEMICAL TECHNIQUES**

Students study about Principle and applications of: Paper chromatography and TLC.Electrophoresis–cellulose acetate membrane electrophoresis and PAGE.

CO 7:**METABOLISM**

Students study about Catabolism and anabolism, Gluconeogenesis, Fatty acid metabolism,Protein metabolism

CO 8:**MOLECULAR BIOLOGY**

Students study about Central dogma of molecular biology–semi conservative replicationand mechanism of DNA replication, transcription, translation. DNA finger printing, definition and its applications.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF BOTANY
PROGRAMME: BSc

COURSE: I SEMESTER (A-1):
MICROBIAL DIVERSITY AND TECHNOLOGY

CO1: Understand the fascinating diversity, evolution, and significance of microorganisms.
CO2: Comprehend the systematic position, structure, physiology and life cycles of microbes and theirimpact on humans and environment.
CO3: Understand the Pathological studies of various fungal forms .
CO4: Gain laboratory skills such as microscopy, microbial cultures, staining, identification,preservation of microbes for their applications in research and industry.

COURSE: II SEMESTER (A-2):
DIVERSITY OF NON- FLOWERING PLANTS

CO1: Understand the diversity and affinities among Algae, Bryophytes, Pteridophytes andgymnosperms.
CO2: Understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes,Pteridophytes and Gymnosperms, and their ecological and evolutionary significance.
CO3 : To gain the knowledge of the origin and evolution of plants .
CO4: To understand Paleo sciences, preservation techniques of plant fossils and exploration of fossilfuels.
CO5: Obtain laboratory skills/explore non-flowering plants for their commercial applications.

COURSE: III SEMESTER (A-3):
Plant Anatomy and Developmental Biology

CO1: Observation of variations that exist in internal structure of various parts of a plant and as wellas among different plant groups in support for the evolutionary concept.
CO2: Skill development for the proper description of internal structure using botanical terms, theiridentification and further classification.
CO3: Understanding the basic concepts in plant morphogenesis, embryology and organdevelopment.

COURSE: IV SEMESTER (A-4):
Ecology and Conservation Biology

CO1 : Understanding the fundamental concepts in Ecology, environmental science andphytogeography.
CO2: Concept development in conservation, global ecological crises, Sustainable development andpros and cons of human intervention.
CO3: Enable the student to appreciate bio diversity and the importance of various conservationstrategies, laws and regulatory authorities and global issues related to climate change andsustainable development.

COURSE: V SEMESTER (DSC-BOT-C9-T):
Paper-V: PlantMorphology and Taxonomy

CO1: Understanding the main features in angiosperm evolution.
CO2: Ability to identify, classify and describe a plant in scientific terms, thereby, Identification ofplants using dichotomous key, skill development in identification and classification of floweringplants.
CO3: Interpret the rules of ICN in Botanical nomenclature.
CO4: Classify plant systematic and recognize the importance of herbarium and virtual Herbarium.Evaluate the important herbaria and botanical garden.

CO5:Recognition of locally available angiosperm families and plants and economically importantplants. Appreciation of human activities in conservation of useful plants from the past to thepresent.
CO 6: Skill development in processing of biomass and plant products as a source of food, healthcare,energy and natural products.

COURSE: V SEMESTER(DSC-BOT-11-T)
Paper-VI: Genetics and Plant Breeding
CO 1: Understanding of cell metabolism, chemical composition, physiochemical and functionalorganization of organelles.
CO 2: Contemporary approaches in modern cell and molecular biology.
CO 3: To study the organization of the cell, cell organelles and biomolecules (i.e. protein,carbohydrate, lipid and nucleic acid).
CO 4: To gain knowledge on the activities in which the diverse macromolecule and microscopic structures inhibiting the cellular world of life are engaged.
CO 5: To understand the various metabolic processes such as respiration, photosynthesis etc., whichare important for life.

COURSE: VI SEMESTER(DSC-BOT-C15-T)
Paper-VIII : Plant Physiology and Biochemistry
CO 1: Preliminary understanding of the basic functions and intermediary metabolism in plant body.
CO 2 : Importance of water and the mechanism of transport.
CO 3: To understand biosynthesis and breakdown of biomolecules.
CO 4: Role of plant hormones in plant development and about secondary mechanism.
CO 5: Recognizing the wonderful mechanism of transport and the interrelationship existing betweenmetabolic pathway thereby gaining and idea about the importance of plant in the dynamicity ofnature.
CO 6: To understand the importance of nutrients in plant metabolism and crop yield.

COURSE: VI SEMESTER (DSC-BOT-C13-T)
Paper-VII : Cell and Molecular Biology
CO 1: Preliminary understanding of the basic functions and intermediary metabolism in plant body.
CO 2 : Importance of water and the mechanism of transport.
CO 3: To understand biosynthesis and breakdown of biomolecules.
CO 4: Role of plant hormones in plant development and about secondary mechanism.
CO 5: Recognizing the wonderful mechanism of transport and the interrelationship existing betweenmetabolic pathway thereby gaining and idea about the importance of plant in the dynamicity ofnature.
CO 6: To understand the importance of nutrients in plant metabolism and crop yield.

OPEN ELECTIVE COURSE (OE-1)
I SEMESTER: PLANTS AND HUMAN WELFARE
CO1: To make the students familiar with economic importance of diverse plants that offer resourcesto human life.
CO2: To make the students know about the plants used as food, medicinal value and also plantsource of different economic value.
CO3: To generate interest amongst the students on plants importance in day today life,conservation, ecosystem and sustainability.

CO 4: To make students aware of forest and forest products.

OPEN ELECTIVE COURSE (OE-2)

II SEMESTER: PLANT PROPAGATION, NURSERY MANAGEMENT AND GARDENING

CO1: To gain knowledge of gardening, cultivation, multiplication, raising of seedlings of gardenplants.
CO2: To get knowledge of new and modern techniques of plant propagation.
CO3: To develop interest in nature and plant life.

OPEN ELECTIVE (OE-3)

III SEMESTER: Landscaping and Gardening

CO1: Creating awareness on basic principles and components of gardening.
CO2: To gain knowledge on Floral arrangement and Bio-aesthetic planning.
CO3: To Develop knowledge on various types of gardens based on various culture.
CO4. To learn the art of Bonsai, to establish and maintain special gardens with outdoor and indoorlandscaping
CO5: To learn the techniques of formal, informal and free style of gardening

PROGRAMME: BSc/BBA/BCA

I SEMESTER: Environmental Studies: Ability Enhancement Compulsory Course (AECC)

CO1: An approach on multidisciplinary nature of environmental studies, its scope, importance.Sustainability and sustainable development goals for healthier planet.
CO2: To understand structure and function of ecosystem describing energy flow, food chains, foodwebs and ecological succession and to analyze the dynamics of different ecosystems throughrelevant case studies.
CO3: A current scenario of natural resources, socio-economic impacts.
CO4: To explore energy resource management, focusing on transition to renewable sources,addressing energy demands and analyzing by case studies.
CO5: To grasp the importance of biodiversity, India's ecological wealth, challenges and an alarmingneed of conservation efforts.
CO6: Comprehensive understanding of pollution, its health risks and practical solutions.
CO 7: To obtain theoretical knowledge, practical insights and problem-solving skills in environmentalmanagement and policy implementation.
CO8: Interpretation between human communities, movements, ethics, conservation and to createawareness based on case studies.

PROGRAMME: BCom /BBA/BCA

II SEMESTER: Environmental Studies: Ability Enhancement Compulsory Course (AECC)

CO1: An approach on multidisciplinary nature of environmental studies, its scope, importance. Sustainability and sustainable development goals for healthier planet.
CO2: To understand structure and function of ecosystem describing energy flow, food chains, food webs and ecological succession and to analyze the dynamics of different ecosystems through relevant case studies.
CO3: A current scenario of natural resources, socio-economic impacts.
CO4: To explore energy resource management, focusing on transition to renewable sources,addressing energy demands and analyzing by case studies.
CO5: To grasp the importance of biodiversity, India's ecological wealth, challenges and an alarming need of conservation efforts.
CO6: Comprehensive understanding of pollution, its health risks and practical solutions.

CO 7: To obtain theoretical knowledge, practical insights and problem-solving skills in environmental management and policy implementation.
CO8: Interpretation between human communitiesand to createawareness based on case studies.

DEPARTMENT OF BIOTECHNOLOGY

PROGRAMME: BSc

SEMESTER I

CO1: Understand concepts in Biotechnology and demonstrate knowledgeacquired in interdisciplinary skills in cell biology and genetics
CO2: Comprehend the structure of a cell with its organelles
CO3: Understand the chromatin structure and its location
CO4: Understand the basic principles of lifeand how a cell divides
CO5: Explain the organisation of genes and chromosomes, chromosomemorphology and its aberrations

SEMESTER II

CO1: To familiarize the students with Scope of Microbiology, Microscopy, Microbial Techniques, Stains and staining techniques etc.
CO2: Concepts of Prokaryotes and Eukaryotes.
CO3: Microbial techniques.
CO4: Microbial growth and metabolism.
CO5: Microbial food Spoilage and food Preservation.

SEMESTER III

CO1: To introduce the students to Molecular biology and Biophysics
CO2 :To learn Analytical techniques, spectroscopy, Colorimetry.
CO3: To enable the students to understand the Scope and development ofBiophysics
CO4: To deliver a detailed knowledge of molecular Biology
CO5: To familiarize the students with Molecular biology techniques.

SEMESTER IV

CO1: To learn the Tools for genetic engineering.
CO2: To understand the fundamentals of genetic engineering
CO3: To familiarize with the concept of Application of r-DNA techniques
CO4: Application of Genetic Engineering

SEMESTER V

CO1: To learn the Tools for genetic engineering.
CO2: To understand the fundamentals of genetic engineering
CO3: To familiarize with the concept of Application of r-DNA techniques
CO4: Application of Genetic Engineering
CO5: This course gives basics of Animal biotechnology and scope ofImmunology
CO6: Students will learn immunological techniques.
CO7: To understand vaccine production and cell lines

SEMESTER VI

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

CO1: To learn various methods in plant tissue culture.
CO2: To acquire fundamental skills to maintain PTC CULTURES
CO3: Students gain knowledge on plant tissue culture
CO4: Basics and application of plant biotechnology
CO5: To provide an introduction to the fundamental concepts, basic principles offermentation technology of Industrial Biotechnology
CO6: To get familiarized with the basic protocols of Production of Microbialproducts.

DEPARTMENT OF MATHEMATICS

PROGRAMME: BSc

SEMESTER I

CO 1: **Matrices**

Find Rank of a matrix, Solution of linear equations, Eigen values and Eigenvectors,CH theorem

CO 2:**Calculus I**

Continuity, differentiability, nth derivatives of the standard functions, Leibnitz theorem

CO 3: **Mean Value Theorems**

Mean Value Theorem, Maclaurin's expansion, Evaluation of limits by Hospital's rule

CO 4: **Partial Differentiation**

Function of 2or more variables, Euler's Theorem, Total derivatives, Jacobians, Taylor's andMaclurins series

SEMESTER II

CO 1: **Group Theory I**

Various types of groups and their properties, subgroups, Order of an element of a group,Cyclic groups and Lagrange's theorem

CO 2: **Group Theory II**

Normal subgroups Quotient group, Homomorphism and Isomorphism of groups, Cayley'stheorem

CO 3: **Calculus II - Polar coordinates**

Different concepts of polar coordinates Angle between radius vector and tangent, anglebetween 2 curves, radius of curvature, pedal equation, asymptotes

CO 4: **Integral Calculus**

Reduction formulae with and without limit, Computation of arc length, area and volumeof curves

SEMESTER III

CO 1: **Differential equations**

Exact differential equations, solvable for p, x , y , Clairaut equation, orthogonal trajectories,Second and higher order ordinary linear differential equations with constant and variablescoefficients by the various methods, Total differential equations

CO 2: **Sequence and Series of real numbers**

Assimilate the notions of limit of a sequence and convergence of a series of real numbers

SEMESTER IV

CO 1: **Partial differential equation**

Formation of pde Solution of pde, charpits method types of first order non-linear pdeHomogeneous Partial differential equation, canonical forms, solution of onedimensionalheat, Laplace and wave equations using separation of variables

CO 2: **Laplace transforms**

Laplace transforms of different types of functions and Inverse Laplace transforms

CO 3: **Fourier series and Transforms**

Fourier series of periodic trigonometric functions and Fourier sine and cosine transforms

SEMESTER V

MATDSCT 5.1: Real Analysis II and Complex Analysis

CO 1: Carry out certain computations such as improper integrals involving Beta andGamma functions.

CO 2: Exhibit certain properties of mathematical objects such as integrable functions, andanalytic functions, harmonic functions so on.
CO 3: Prove some statements related to complex integral as well as in complex analysis
CO 4: Carry out the existing algorithms to construct mathematical structures such asanalytic functions.
CO 5: Evaluate the utility of complex analysis in solving real world problems.

SEMESTER V
MATDSCT 5.2: Vector Calculus and Analytical Geometry
CO 1: Get introduced to the fundamentals of vector differential and integral calculus.
CO 2: Get familiar with the various differential operators and their properties.
CO 3: Get acquainted with the various techniques of vector integration.
CO 4: Learn the applications of vector calculus.
CO 5: Recollect the fundamentals of Analytical Geometry in 3D.
CO 5: Interpret the geometrical aspects of planes and lines in 3D.

SEMESTER VI
MATDSCT 6.1: Linear Algebra and Calculus of Variations
CO 1: Identify and analyze the algebraic structures such as ring, field, and integral domain.
CO 2: Understand the concepts of vector spaces, subspaces, bases dimension andtheir properties.
CO 3: Understand the concept of linear transformation and eigenvalue analysis.
CO 4: Understand the concept of functionals and applications.
CO 5: Apply the knowledge gained to various situations inside and outside mathematics.

SEMESTER VI
MATDSCT 6.2: Numerical Analysis
CO 1: Describe various operators arising in numerical analysis such as difference operators,shift operators and so on.
CO 2: Articulate the rationale behind various techniques of numerical analysis such as infinding roots, integrals and derivatives.
CO 3: Reproduce the existing algorithms for various tasks as mentionedpreviously in numerical analysis.
CO 4: Apply the rules of calculus and other areas of mathematics in justifying thetechniques of numerical analysis.
CO 5: Solve problems using suitable numerical technique.
CO 6: Appreciate the profound applicability of techniques of numerical analysis in solvingreal life problems and also appreciate the way the techniques are modified to improvethe accuracy.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF BUSINESS ADMINISTRATION

PROGRAMME: BBA

SEMESTER I: Management Process

CO1: Basic concepts of management, principles, ethics and social responsibility.
CO2: Concepts of planning and decision making.
CO3: Concepts of organizing and staffing, mbo and mbe.
CO4: Motivational theories, leadership styles and communication.
CO5: Concepts of controlling and essentials for sound contol system

SEMESTER I: Marketing Management

CO1: Procedure in report writing, contents and bibliography.
CO2: Concepts of marketing, its application and recent trends in marketing.
CO3: Various macro environment factors affecting the business.
CO4: Elements of marketing mix ie. product ,price, place and promotion.
CO5: Requisites of market segmentation various factors influencing the consumer behaviour

SEMESTER II: Financial Accounting

CO1: Fire insurance claims, salvage and average clause.
CO2: Hire purchase and installment systems.
CO3: Royalty accounts, recoupment and short workings.
CO4: Procedure for sale of partnership to a limited company.
CO5: Procedure for issue of shares and preparation of balance sheet in vertical form.

SEMESTER II: Quantitative Methods for Business – I

CO1: System, integers, hcf, lcm etc.
CO2: Theory of equations, commercial applications and methods.
CO3: Arithmetic and geometric progressions.
CO4: Matrices and determinants.
CO5: Commercial arithmetic, ratios and proportions.

SEMESTER III: Organizational Behaviour

CO1: Basic concepts of organisationalbehaviour and its emerging issues.
CO2: Concepts of personality, perception and attitude.
CO3: Principles of learning and behaviour modification, organisational reward systems.
CO4: Types of group dynamics,groupbehaviour,group norms and cohesiveness.
CO5: Process of organizational change, development and interventions

SEMESTER III: Cost Accounting

CO1: Sound principles of bank lending.
CO2: Basic cost concepts and its elements.
CO3: Various methods in material cost control.
CO4: Various methods followed in labour cost control.
CO5: Various classifications of overheads and machine hour rate.

SJR College For Women
Rajajinagar, Bengaluru-10

SEMESTER III: Human resource Management

CO1: Basic understanding of human resources management and its recent trends.
CO2: Human resource planning,recruitment and selection processes.
CO3: Identification of training needs and the various methods.
CO4: Various performance appraisal methods and compensation system.
CO5: Purpose and need for transfers and promotions ad right sizing of workforce.

SEMESTER IV: Management Accounting

CO1: Various concepts of management accounting.
CO2: Concept of ratio analysis and preparation of profit and loss account and balance sheet.
CO3: Concept of fund and preparation of fund flow statement.
CO4: Preparation of cash flow statement according as-3 format.
CO5: Concepts of marginal costing and budgetary control.

SEMESTER IV: Financial Markets Services

CO1: Primary and secondary markets of stock exchange.
CO2: Non-banking financial intermediaries
CO3: Organisation, structure and functioning of SEBI
CO4: Concept of mutual funds and its future in India.
CO5: Various recent trends in financial services.

SEMESTER IV: Business Analytics

CO1: Understand types of analytics and data models
CO2: The role of data in decision making, sources and types of Data.
CO3: Ability to analyse data using different data analytic tools and draw inferences.
CO4: Understand applied statistics for business problems.
CO5: Demonstrate visualization of data.

SEMESTER IV: Financial Management

CO1: Identify the goals of financial management.
CO2: The concepts of time value of money for financial decision making.
CO3: Evaluate projects using capital budgeting techniques.
CO4: Design optimum capital structure using EBIT and EPS analysis.
CO5: Evaluate working capital effectiveness in an organization.

SEMESTER IV: Banking Regulations Operations

CO1: Healthcare and information technology services.
CO2: Regulations, functions and control of commercial banks.
CO3: General and special relationship between banker and customer.
CO4: Various kinds of negotiable instruments and endorsements.
CO5: Duties, responsibilities and statutory protection given to paying banker and collectingbanker.

SEMESTER V: Information technology for Business

CO1: Various concepts of information systems used in business.
CO2: Various types of management information systems.
CO3: Preparation of documents in ms word, excel and Power Point.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

CO4: Different types of database management systems.
CO5: Accounting software available to the businesses.

SEMESTER V: Human Resource Development
CO1: Basic concepts of strategic human resources management.
CO2: Various investment perspectives concerning the human resources department of the organisation.
CO3: Various strategies to manage the organisational change with the help of tqm,flexible work arrangement etc.
CO4: Various ways to establish strategic plans of the organisation.
CO5: Managing global human resources or internationalization of business.

SEMESTER V: Productions and operations management
CO1: Basic concepts of production and operations management with automation.
CO2: Various factors affecting plant location and the various facilities in plant layout.
CO3: Material management techniques, standardisation, simplification and codification.
CO4: Various concepts of production planning and control, iso, time and motion study withcharts and diagrams.
CO5: Objectives of maintenance management, waste management techniques, salvage, disposaland scrap.

SEMESTER V: Income Tax – I
CO1: Comprehend the procedure for computation of Total Income and tax liability of an individual.
CO2: Understand the provisions for determining the residential status of an Individual.
CO3: Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary,allowances andvarious retirement benefits.
CO4: Compute the income house property for different categories of house property.
CO5: Comprehend TDS & advances tax Ruling and identify the various deductions undersection 80.

SEMESTER V: Consumer Behaviour and Market Research
CO1: Understanding of Consumer Behaviour towards products, brands, and services.
CO2: Establish the relevance of consumer behaviour theories and concepts to marketingdecisions.
CO3: Implement appropriate combinations of theories and concepts.
CO4: Understanding of market research process
CO5: Understanding of Data Analysis and reporting in market research.

SEMESTER V: Human Resource Development and Leadership
CO1: Understand the need of HRD.
CO2: Comprehend the framework of HRD.
CO3: Understand the models for evaluating the HRD.
CO4: Analyse different leadership styles, types, patterns and functions.
CO5: Demonstrate an understanding of various leadership approaches for effective managementof people.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

SEMESTER VI: International Business

CO1: Various forms of international business and its theories.
CO2: Various modes of entry into international business.
CO3: Concepts of multi-national companies and its impact on the economy.
CO4: Understanding of international marketing intelligence.
CO5: Exim trade and policy.

SEMESTER VI: Income Tax - II

CO1: Legal framework of income tax , residential status and exempted incomes.
CO2: Computation of income from salary of an individual.
CO3: Determination of income from house property.
CO4: Computation of profits and gains from business and profession.
CO5: Calculation of income from capital gains.

SEMESTER VI: Compensation and Performance Management

CO1: Understand the concepts of Compensation management.
CO2: Describe job evaluation and its methods.
CO3: Evaluate the different methods of wages.
CO4: Describe performance management and methods of performance management.
CO5: Preparation of Payroll.

SEMESTER VI: Business Law

CO1: Comprehend the laws relating to Contracts and its application in business activities.
CO2: The rules for Sale of Goods and rights and duties of a buyer and a Seller.
CO3: Understand the importance of Negotiable Instrument Act and its provisions relating to Cheque and other Negotiable Instruments.
CO4: Significance of Consumer Protection Act and its features
CO5: Understand the need for Environment Protection.

SEMESTER VI: Advertising and Media Management

CO1: Understand the nature, role, and importance of IMC in marketing strategy
CO2: Effective design and implementation of advertising strategies
CO3: Present a general understanding of content, structure, and appeal of advertisements
CO4:Understand ethical challenges related to responsible advertising and brand strategymanagement.
CO5: Evaluate the effectiveness of advertising and agency's role.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF COMMERCE

PROGRAMME: BCom

SEMESTER I: Financial Accounting

CO 1: Learning the basic concepts of Accounting Standards. Enhance practicalknowledge on formulation of accounting equations.

CO 2: To impart practical knowledge on preparing Financial Statements of Soleproprietary concern of Manufacturing entity and non-manufacturing entity.It gives theoretical knowledge on basic terms which comes under ConsignmentBusiness. Educate students on preparation of ledger accounts for consignment business in thebooks of Consignor and Consignee.

CO 3: Impart theoretical knowledge on basic concepts on RoyaltyBusiness.It enables students to learn Table Analysis to identify Surplus andshort working.It educates the students to prepare accounting transactions for royalty business in thebooks of lessor.

CO 4: It helps students to learn preparation of branch accounts using invoice pricemethod and cost price method.The students learn the difference between head office accounts and branch office accounts.

SEMESTER I: Management Principles and Applications

CO 1 : Enhancestudents'knowledge about the concept ofmanagement. It helps students to know how to manage 21st Century organizations.

CO 2: Students can study about the types and importance of planning, variousplanning processes and decision-making processes.

CO 3: Students learn the importance of organizing and the different types of organizational structure.

CO 4: Students are equipped with the knowledge of Staffing processes like Recruitment and Selectioncriteria. They learn various theories of Motivation.

CO 5: Students learn the importance of Coordination. It providesdetailed knowledge on importance of Controlling for managing things.

SEMESTER I: Principles Of Marketing

CO 1: Basic introduction to the concept ofmarketing. It helps students understand the evolution of marketing and MarketingEnvironment.

CO 2: Students are taught about Consumer buying decision processes. Itenhances learning on the importance of Market Segmentation.

CO 3: Students are guided on how to develop a product with knowledge of various different stages of it. They learn different Pricing Strategies and factors affecting the price of products.

CO 4: Learn importance of promotion, different types of promotion and the various distribution channels.

CO 5: Learn the recent developments in the field of Marketing including e-Marketing.

SEMESTER II: Advanced Financial Accounting

CO 1: Students learn to compute the amount of claims for loss of stock and loss of profit thereby understanding fire insurance concepts.

CO 2: Learn various methods of accounting for hire purchase transactions including important terminologies.

CO 3: Dealing with the inter-departmental transfers and their accounting treatments enabling students to master financial statements in columnar form.

CO 4: Prepare financial statements from incomplete records to understand the nuances of double entry systems.

CO 5: Outline the emerging trends in the field of accounting especially in the field of Digital Accounting.

SEMESTER II: Corporate Administration

CO 1: Understand the framework of Companies Act of 2013 and different kind of companies.
CO 2: Identify the stages and documents involved in the formation of companies in India, formation of global companies and its types.
CO 3: Analyse the role, responsibilities and functions of Key management Personnel in CorporateAdministration.
CO 4: Examine the procedure involved in the corporate meeting and the role of Company Secretary inthe meeting.
CO 5: Evaluate the role of liquidator in the process of winding up of a company and the various modes of doing it.

SEMESTER II: Law Practise of Banking

CO 1: Summarize the relationship between Banker and customer and the different types of functions of
a Banker.
CO 2: Analyse the role, functions and duties of paying and collecting bankerfor enhanced learning of managing and the consequences of dishonour of cheques.
CO 3: Make use of the procedure involved in opening and operating different accounts.
CO 4: Examine the different types of negotiable instrument & their relevance in the present context.
CO 5: Estimate possible developments in the banking sector in the upcoming days. Students learn digital wallet, crypto currency and BASEL forms.

SEMESTER III: Corporate Accounting

CO 1: Understand the concept of underwriting, types of underwriting SEBI rules and solving problems on underwriting of shares and debentures of companies.
CO 2: Learn to calculate pre-incorporation profit with capital expenditure and revenue expenditure treatment. Prepare income statement under Schedule III of Companies Act 2013.
CO 3: Gain insight on the Valuation of Goodwill and the methods of Valuation of Goodwill.
CO 4: Understand the valuation corporate Securities under different methods. Including valuation of preference shares and Debentures.
CO 5: Understand the financial statements of companies, Treatment of Special Terms under IND AS 1 and the preparation of P&L account and balance sheet.

SEMESTER III: Business Statistics

CO 1: Understand basics of Statistics, statistical terms, techniques, calculations, and uses of Statistics and classification of data for tabulation and presentation purposes.
CO 2: Comprehend the measures of Dispersion calculations of Range, Quartile Deviation, Standard Deviation and Co-efficient of Variance.
CO 3: Understand Correlation Analysis and its typesincluding calculation of Pearson's Efficient of correlation.
CO 4: Learn the concept of Regression and solve problems pertaining to the concept.

SJH... Rajajinagar, Bengaluru-10

SEMESTER III: Cost Accounting

CO 1: Demonstrate an understanding of the concepts of Costing, Cost Accounting, its types , classification, elements and comparison studies.

CO 2: Students will understand the Nature of Materials - Direct and Indirect – PurchaseProcedure - Store Keeping Functions - Fixation of Levels (Including Problems) - Inventory Control - Periodical and Perpetual Inventory, ABC Analysis, EOQ,Stores issue - Valuation of Bought Materials, Capacity determination as per CAS2 andCAS6,methods of Pricing of Issue – FIFO – LIFO – Simpleand Weighted Average Methods.

CO 3: Students will understand the Direct Labor - Indirect Labor - Labor Cost - Labor CostControl - Time Keeping - Methods of Time Keeping - Time Booking – Records - Idle Time -Causes for Idle Time Students will gain knowledge on Treatment of Idle Time – Overtime -Labor Remuneration - Features of Good Wage System - Methods of Wage Payment – Timerate System - Piece Rate System - Bonus System – Gantt Bonus Plan, Taylor DifferentialPiece Rate System and Labor Turnover.

CO 4: : Students will understand the Collections and Classification of Overheads -Allocation and Apportionment – Primary Distribution - Secondary Distribution -Reapportionment of Service Department Costs to Production Departments (Direct Method –Reciprocal)

CO 5: Students will understand Repeated Distribution Method and SimultaneousEquation Method. Absorption of Overheads - percentage of Direct Material Cost -Direct Labour Cost - Prime Cost - Direct Labour Hour Rate and Machine Hour Rate and Activity Based Costing.

CO 6: Students understand the cost sheet meaning, items which come in different heads ofcost in Cost Sheet, formatting of Cost Sheet - Tenders and Quotations.

SEMESTER IV: Advanced Corporate Accounting

CO1:Students learn about legal provision of preference share duringRedemption.It enhances the knowledge regarding arranging cash balance for thepurpose of Redemption.

CO2: LearnRedemption of Debenture, types of debentures and methods of Redemption.

CO3: Basic concept of Amalgamation and Acquisition ofCompanies and Amalgamation in the nature of Merger andPurchase including various methods ofAmalgamation.

CO4: Students learn the theory of Capital Reduction, its objectives,provisions for Reduction of Share capital under companies Act 2013 and practicalknowledge regarding forms of Reduction, Problems on passing journal entries, and preparation ofcapital Reduction.

CO5: Acquire vast knowledge regarding Liquidation of companies and the different modes of winding up of companies

SEMESTER IV: Costing Methods and Techniques

CO1: Students are introduced to the concepts of Job and Contract Costing. They acquire practical knowledge regarding preparation of Contract Accounts and Job costing Sheets.

CO2: Learn the process of Costing, difference between Job Costing and Processing Costing.

CO3: Students will get insights into meaning of Service Costing, applications of servicecosting and the difference between service costing and product costing.

Students will get vast knowledge of cost and cost unit for different Service

CO4: Learn about Marginal Costing, the various terms used in Marginal costing and students get practicalknowledge on solving problems on BEP.

CO5: Standard costing, features andLimitation includingVariance and types of Variances. Students also gain practical knowledge on how to solve on Material and labour Variance.

SEMESTER IV: Business Regulatory Framework

CO1: Students will gain knowledge regarding contract and Acts related to that,classification of contract, and breach of contract.

Principal
SJB College of Law
Rajajinagar, Bengaluru

CO2: Sale of Goods Act. Students gainknowledge regarding various laws that protects consumers.
CO3: Students learn Negotiable instruments in detail.
CO4: Detailed learning on Consumer Rights.
CO5: Students are taught about the importance of environment and the Act related to environment and its provisions.

SEMESTER V: Income Tax I

CO 1: Basic concepts of Income Tax.
CO2: To know about the tax exemption given by Income Tax Authority.
CO3: To compute Residential Status of an Individual and study incidence of Tax
CO4: Practical exposure of filing Income Tax return for Salary.
CO5: To get practical exposure of computing Income from Salary.

SEMESTER V: Auditing and Corporate Governance

CO1: Basic aspects of Auditing and its importance including the procedure of appointment of company auditor and his duties.
CO2: Internal control of auditing.
CO 3: Learning on the types of Vouchers.
CO 4: Role and responsibilities of an auditor with regards to valuation of Assets.
CO 5: Basic aspects of Corporate Governance,ways to strengthen corporate governance role and composition board.

SEMESTER V: Advanced Accounting

CO 1: Gain knowledge about Employee stock option schemes.
CO 2: Practical knowledge about calculation of Buy Back of Shares.
CO 3: Learn about Ex- Purchase price, Sales price and calculation of Interest and gain a better understanding of Ex interest selling price cum Ex-Interest purchase price.
CO 4: Learn about Schedules to prepare final accounts for Banking companies.
CO5: Different insurance and accounting treatment of variousinsurance companies including Advanced Accounting and their impact on business.

SEMESTER V: Methods of Costing

CO1: Practical exposure to prepare cost sheet of individual job and Batch.
CO 2: Skill enhancement on contract costing undertaken by construction industries.
CO 3: Practical exposure to preparing costing for various process industries.
CO 4: Equip students with knowledge on Service Costing undertaken by transport industries
CO 5: Formulate Overhead using predetermined rates and Activity Based Costing.

SEMESTER V: Advanced Financial Management

CO 1: Enhance knowledge on fundamental tools used to analyse FinancialStatements.
CO 2: Learn how to measure the value of business in terms of equity.
CO 3: Different approaches for value-based management.
CO 4: Learn about the importance of re-arranging corporate structure.
CO 5: Practical exposure on measuring the value of business after merger.

Principal
SJR College For Women
Jalahalli, Bengaluru-13

SEMESTER VI: Management Accounting

CO1: Students learn to understand the concepts and importance of managementaccounting with various branches of accounting. It enables the students to analyse and tomake interpretation of two different years of financial statements.They will study about various methods used to analyse and interpret financial statements.

CO2: Students learn the concept of Ratio Analysis and the different typesof Ratios.This helps to better understand the financial report and importance of individual items in financial statements including by solving problems.

CO3: Understand the concept of Cash Flow and how to analyse it.

CO4: Students are taught break-even point, profit and volume-based ratio.

CO5: Learn to draft a company's report along with the important aspects to beconsidered in a Company's Financial Report to the management. This helps students learn the requisites and principles of a good reporting system.

SEMESTER VI: Income Tax II

CO1:Students gain practical knowledge in determining income under business orprofession along with the basic concepts about business or profession.

CO2:Enables students to acquire an understanding of terminologies on capital gainsand basis of charge. They also learn to calculate capital gains along with knowledge about exemptions.

CO3:Practical knowledge in determining income from other sources.

CO4: Understand and learn to perform calculation on Set off and carry forward of losses and deduction from Gross total income .

CO5:Develop skills to assess Total Income and Tax Liability of an individual and gain knowledge in computing income from various heads with theexemptions and deductions applicable.

SEMESTER VI: Accounting for Government Local Bodies

CO1: Enhance students' knowledge in government accounting rules and toolsfor fiscal transparency. Students will be versed in the fundamental concepts of suspenseaccounts and principles of classification of government accounts.

CO2: Students learn about appropriation, bill, articles related to publicaccounts and overall knowledge in powers of sanction,maintenance of accounts and contingent expenditure.

CO3: Learning includes grants given to Zilla Panchayath andTaluk Panchayath accounts thereby enhancing the knowledge regarding the financialfunctions of the different Panchayath.

CO4: Develop an understanding in the methods of vouching and expenditure.

CO5: Learn eligibility criteria of an auditor, auditing process in Government and other different sectors.

SEMESTER VI: Security Analysis and Portfolio Management

CO1: Understand different investment alternatives in the market.

CO2: Theoretical and practical background in the field of investments.

CO3: Describe the meaning of Asset Pricing and its various methods andmeasuring theportfolio performances.

CO4: Designing and managing bond as well as equity portfolios in the real word.

CO5: Valuing equity and debt instruments.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

DEPARTMENT OF COMPUTER SCIENCE

PROGRAMME: BCA

SEMESTER I: Problem Solving Techniques

CO1: To explain the role of algorithm, analysing the algorithm and various examples like exchanging of 2 values, reversing of a number, counting

CO2: To discuss the various control structures, declaration and initializing the arrays and pointers

CO3: To Compute the square root of a number, to formulate greatest common divisor, to generate pseudo random number

CO4: To arrange the numbers using selection sort, insertion sort, bubble sort, to explain different searching techniques, to discuss text line editing, text line length adjustment.

SEMESTER I: Data Structures

CO1:To understand basic data structures, their implementation and some of their standard applications.

CO2: To develop the ability to analyse the running time and prove the correctness of basic algorithms.

CO3: To develop the ability to design and analyse simple algorithms using the appropriate data structure learned in the course.

SEMESTER II: Computer Architecture

CO1: To discuss the number system and to explain the logic gates. Solve the problems to simplify Boolean expressions, to describe combinational and sequential circuits.

CO2: To discuss on instruction codes, computer registers, to explain different addressing modes and instruction formats.

CO3: To explain register transfer languages memory transfer, to design control unit, to describe memory mapped I/O, Interrupt driven I/O, to discuss DMA and Instruction Level Parallelism

CO4:To classify memory, categorize ROM, to discuss multi-threaded architecture, Distributed memory- MIMD architecture

SEMESTER II: Object Oriented Programming Using Java

CO1: An understanding of the principles and practice of object-oriented programming in the construction of robust maintainable programs which satisfy the requirements

CO2: Ability to create and working with packages and interfaces.

CO3: Design and implement an application that demonstrates their competency with Java syntax, structure and programming logic, incorporating basic features of the language as well as features from the I/O (Input/Output) or GUI libraries.

CO4: Understanding and working with events and GUI programming, ability to implement error handling techniques using exception handling, able to develop interactive programs using applets

CO5: Understanding and implementing Multithreading in java, Collections in java, a brief Introduction to JavaBeans and Network Programming.

SEMESTER II: Database Management System

CO1: Demonstrate the basic elements of a relational database management system.

CO2: Identify the data models for relevant problems.

CO3: Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data into RDBMS and formulate SQL queries on the data

CO4:Demonstrate their understanding of key notions of query evaluationand optimization techniques.

CO5: Extend normalization for the development of application software.

SEMESTER II: Office Management Tools

CO1: To give detailed knowledge of MS-Office.

CO2: Skill to work with MS-Word, Excel and PowerPoint.

CO3: Initiation into the process of writing business letters or job applications, tabulating data, preparing PPTs etc., using MS-Office.

SEMESTER III: CAAR

CO 1: Demonstration of Hardware peripherals: CPU, RAM, SMPS, Motherboard, NIC card, Processor, Processor cooling fan, PCI card, HDD and learn to add a hardware device.

CO 2: Demonstration of various ports: CPU , VGA port, PS/2 (keyboard, mouse) ,USB, LAN, Speaker, Audio.

CO 3: Ability to identify the Computer Name and Hardware Specifications

CO 4: Identify and troubleshoot the problems of RAM, SMPS and motherboard.

CO 5: Configure BIOS settings- disable and enable USB and LAN.

CO 6:Learn to recover hidden files from corrupted pendrive using commands.

CO 7: Recover the contents from crashed Hard Disk using Disk Drill software.

CO 8:Learn to install Operating System and partitioning.

CO 9:Learn to install Operating System - Unix family (Linux/UBUNTU)

CO 10:Learn to install Application software and anti-virus.

SEMESTER III: Operating System

CO1: Ability to apply CPU scheduling algorithms to manage tasks.

CO2: Initiation into the process of applying memory management methods and allocation policies.

CO3: Knowledge of methods of prevention and recovery from a system deadlock

SEMESTER III: Computer Networks

CO1: Identify the different components in a Communication System and their respective roles.

CO2: Describe the technical issues related to the local Area Networks

CO3: Identify the common technologies available in establishing LAN infrastructure

SEMESTER III: Python

CO1: Understand and comprehend the Basics Concepts of Python Programming.

CO2: Understand the working of Python Data structures, File handling and Exception Handling.

CO3: Apply Python Collection Objects, Object-Oriented Features, Python modules to develop Python Applications.

CO4: Implement Data Manipulation and Data Visualization with Pandas.

SEMESTER IV:Analysis and Design of Algorithms

CO 1:Analyse worst-case running times of algorithms using asymptotic analysis.

CO2: Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm.

CO3: Describe the dynamic programming paradigm and explain when an algorithmic design situation calls for it. Recite algorithms that employ this paradigm.

CO4: Describe the greedy paradigm and explain when an algorithmic design situation calls for it.

Principal
SJR College For Wome
Rajajinagar, Bengaluru

CO5: Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate.

SEMESTER IV:Software Engineering

CO1: Familiarization with the concept of software engineering and its relevance.
CO 2: Understanding of various methods or models for developing a software product.
CO3: Ability to analyse existing system to gather requirements for proposed system.
CO4: Skill to design and code a software.

SEMESTER IV:Internet Technologies

CO 1: Understand the working principles of the internet and its protocols.
CO 2: Develop static web pages using HTML and CSS.
CO 3: Implement interactive features on web pages using JavaScript.

SEMESTER V: Artificial Intelligence

CO1: Understand knowledge of the building blocks of AI as presented in terms of intelligent agents.
CO2: Analyse and formalize the problem as a state space, graph, design heuristics and select amongst different search techniques/strategies to solve them.
CO3: Represent knowledge using predicate logic and structure knowledge, Formulate and solve problems with uncertain information using Bayesian approaches. Attain the capability to represent various real-life problem domains using logic-based techniques
CO4: Understand the planning and planning problem, Able to solve any real time problem using STRIPS planning algorithm, nonlinear planning using constraint posting, hierarchical planning, learning in problem solving with different types. Understand and explain the basics, characteristics, applications of neural network. and their architectures.
CO5: Able to understand and develop expert systems for any real time application.: understanding the levels of knowledge used in language. Apply concept Natural Language processing to problems leading to understanding of cognitive computing

SEMESTER V: Web Programming

CO1: Ability to develop web pages using HTML and Cascading Style Sheets.
CO2: Skill to create XML documents and Schemas.
CO3: Knowledge of client-side (JavaScript) and server-side scripting languages to build dynamic web pages.
CO4: Familiarization with Web Application Terminologies, Internet Tools and other web services.
CO5: Ability to develop applications with UI Interfaces.

SEMESTER V: Data Analytics

CO 1: Explore the fundamental concepts of data analytics.
CO 2: Recognize and conduct statistical inference to solve engineering problems.
CO 3: Appreciate the science of statistics and the scope of its potential applications.
CO 4: Summarize and present data in meaningful ways.
CO 5: Select the appropriate statistical analysis depending on the research question at hand.
CO 6: Form testable hypotheses that can be evaluated using common statistical analyses.
CO 7: Effectively and clearly communicate results from analyses performed to others

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

SEMESTER V: Data Mining

CO1: To demonstrate an understanding of the concepts of importance of data mining, and the principles of business intelligence

CO2: To organize and prepare the data needed for data mining using pre preprocessing techniques

CO3: To understand data mining algorithms inClassification, Clustering, and Association Rules.

CO4: To define and apply metrics to measure the performance of various data mining algorithms

SEMESTER V: Cyber Crime Cyber Law & Intellectual Property Rights

CO 1: Understand the legal frameworks and regulations governing cyberspace.

CO 2: Identify and analyse legal issues related to information technology.

CO 3: Evaluate the ethical implications of information technology practices.

CO 4: Apply security measures to protect information systems and data.

CO 5: Develop an understanding of the legal rights and responsibilities of individuals and organizations in cyberspace.

SEMESTER V: Quantitative Techniques

CO1: Understand the quantitative approach to problem solving and decision making.

CO2: Use different quantitative approach for developing strategy to find solutions for problems.

CO3: Reason, model, and draw conclusion or make decisions with mathematical, statistical and quantitative information.

CO 4: Develop overall understanding of teaching objectives, research objective and improve communication skills .

SEMESTER VI: Machine Learning

CO 1: Learn the basics of machine learning, understanding its uses, challenges, and various applications.

CO 2: Build practical data skills, covering data collection, analysis, visualization, and preparation.

CO 3: Become skilled in using classification and regression algorithms, including selecting, training, and evaluating models.

CO 4: Dive into advanced clustering and specialized applications, using methods like K- Means, DBSCAN, and others.

SEMESTER VI: Mobile Application Development

CO1: Understand the basic concepts of Mobile application development

CO2: Design and develop user interfaces for the Android platforms

CO3: Apply Java programming concepts to Android application development and create an application using database

SEMESTER VI: Electronic Content Design

CO 1: To deliver the content via various media such as radio, television, computer etc.

CO 2: To increase students' concentration on particular subject matter in depth learning.

CO 3: To feel emotionally good with joyful learning and active learning involvement of students during the content delivery.

CO 4: To reuse many time the content to various group of same class without hesitate and unchanging. CO 5: To handle easy to the facilitators during the content delivery. To modify the content with present time needs.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

SEMESTER VI: Operations Research

CO 1: Formulation of optimization model and applying appropriate optimization techniques for decision making.

CO 2: Solve linear programming problems using appropriate optimization techniques.

CO 3: Finding the optimal strategy for Minimization of Cost of shipping of products from source to Destination.

CO 4: Optimizing the allocation of resources to Demand points in the best possible way.

DEPARTMENT OF COMPUTER SCIENCE

PROGRAMME: BSc

SEMESTER I: Problem Solving Techniques

CO 1: To explain the role of algorithm, analysing the algorithm and various examples like exchanging of 2 values, reversing of a number, counting

CO 2: To discuss the various control structures, declaration and initializing the arrays and pointers

CO 3: To Compute the square root of a number, to formulate greatest common divisor, to generate pseudo random number

CO 4: To arrange the numbers using selection sort, insertion sort, bubble sort, to explain different searching techniques, to discuss text line editing, text line length adjustment.

SEMESTER II: Data Structures

CO1:To understand basic data structures, their implementation and some of their standard applications.

CO2: To develop the ability to analyse the running time and prove the correctness of basic algorithms.

CO3: To develop the ability to design and analyse simple algorithms using the appropriate data structure learned in the course.

SEMESTER III: Java

CO1: An understanding of the principles and practice of object-oriented programming in the construction of robust maintainable programs which satisfy the requirements

CO2: Ability to create and working with packages and interfaces.

CO3: Design and implement an application that demonstrates their competency with Java syntax, structure and programming logic, incorporating basic features of the language as well as features from the I/O (Input/Output) or GUI libraries.

CO4: Understanding and working with events and GUI programming, ability to implement error handling techniques using exception handling, able to develop interactive programs using applets

CO5: Understanding and implementing Multithreading in java, Collections in java, a brief Introduction to JavaBeans and Network Programming.

SEMESTER IV: Operating System

CO1: Ability to apply CPU scheduling algorithms to manage tasks.

CO2: Initiation into the process of applying memory management methods and allocation policies.

CO3: Knowledge of methods of prevention and recovery from a system deadlock

SEMESTER V: AI

CO1: Understand the various characteristics of problem solving agents and apply problem solving through search for AI applications.

Principal
SJR College For Women
Rajajinagar, Bengaluru-10

CO 2: Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.
CO 3: Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.
CO 4: Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.
CO 5: Obtain insights about machine learning, neural networks, deep learning networks and their significance.

SEMESTER V: DBMS

CO1: Demonstrate the basic elements of a relational database management system.
CO2: Identify the data models for relevant problems.
CO3: Design entity relationship and convert entity relationship diagrams into RDBMS and formulate SQL queries on the respect data into RDBMS and formulate SQL queries on the data
CO4:Demonstrate their understanding of key notions of query evaluationand optimization techniques.
CO5: Extend normalization for the development of application software.

SEMESTER VI: Python

CO1: Understand and comprehend the Basics Concepts of Python Programming.
CO2: Understand the working of Python Data structures, File handling and Exception Handling.
CO3: Apply Python Collection Objects, Object-Oriented Features, Python modules to develop Python Applications.
CO4: Implement Data Manipulation and Data Visualization with Pandas.

SEMESTER VI: Computer Networks

CO1: Identify the different components in a Communication System and their respective roles.
CO2: Describe the technical issues related to the local Area Networks
CO3: Identify the common technologies available in establishing LAN infrastructure