People's Education Trust (R), Mandya
P.E.S. College of Science, Arts & Commerce, Mandya.
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Principal Affiliated to University of Mysore
(94482 82581 (Accredited by **NAAC** with 'A' Grade)

Course Outcome (Semester I)–NEP
Year of Introduction:2020-21

Name of the Program: Bachelor of Business Administration (BBA) **Course Code:** BBA 1.1 **Name of the Course:** Management Principles & Practice		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs**	**56 Hrs**
Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,		
Course Outcomes: On successful completion of the course, the Students will demonstrate a) The ability to understand concepts of business management, principles and functionof management. b) The ability to explain the process of planning and decision making. c) The ability to create organization structures based on authority, task and responsibilities. d) The ability to explain the principles of direction, importance of communication,barrier of communication, motivation theories and leadership styles. e) The ability to understand the requirement of good control system and control techniques.		

Name of the Program: Bachelor of Business Administration (BBA) **Course Code:** BBA 1.2 **Name of the Course:** Fundamentals of Business Accounting		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs**	**56 Hrs**
Pedagogy: Classrooms lecture, tutorials, and problem solving.		
Course Outcomes: On successful completion of the course, the Students will demonstrate a) Understand the framework of accounting as well accounting standards. b) The Ability to pass journal entries and prepare ledger accounts c) The Ability to prepare subsidiaries books d) The Ability to prepare trial balance and final accounts of proprietary concern. e) Construct final accounts through application of tally.		

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 1.3
Name of the Course: Marketing Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**56 Hrs**

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will demonstrate

a) Understand the concepts and functions of marketing.
b) Analyse marketing environment impacting the business.
c) Segment the market and understand the consumer behaviour
d) Describe the 4 p's of marketing and also strategize marketing mix
e) Describe 7 p's of service marketing mix.

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 1.5 (OEC)
Name of the Course: Business Organization and Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course outcomes: on successful completion of the course, the Students will demonstrate:

a) To Understand the concepts of Business organizations and Social Responsibilities of Business
b) To Describe the various forms of Business organization
c) To Understand the levels of managements and Describe the contribution of management thinkers
d) To demonstrate the functions of management effectively
e) To describe the technology driven work Place and some recent trends in Management

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 1.5(OEC)
Name of the Course: Skills For Management (OEC)

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

Course Outcomes: On successful completion of the course, the Students will demonstrate

a) The Ability to communicate and Present effectively by inculcating listing skills
b) To Understand the value of Time through various Time Management tips and strategies
c) To take the right decisions of the enterprise for success and to achieve its predetermined goals
d) To Identify as a Responsible team member and carry out the team activates effectively and abili understand need leadership in management
e) To apply Emotional Intelligence at organization and Overcoming the conflicts using various techniques

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 2.1
Name of the Course: Financial Accounting and Reporting

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**56 Hrs**

Pedagogy: Classrooms lecture, tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will demonstrate

a) The ability to prepare final accounts of partnership firms
b) The ability to understand the process of public issue of shares and accounting for the same
c) The ability to prepare final accounts of joint stock companies.
d) The ability to prepare and evaluate vertical and horizontal analysis of financial statements
e) The ability to understand company's annual reports.

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 2.2
Name of the Course: Human Resource Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**56 Hrs**

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies & field work etc.,

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

a) Ability to describe the role and responsibility of Human resources management functions on business
b) Ability to describe HRP, Recruitment and Selection process
c) Ability to describe to induction, training, and compensation aspects.
d) Ability to explain performance appraisal and its process.
e) Ability to demonstrate Employee Engagement and Psychological Contract.

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 2.3
Name of the Course: BUSINESS ENVIRONMENT

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**56 Hrs**

Pedagogy: Classrooms lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will demonstrate

a) An Understanding of components of business environment.
b) Ability to analyse the environmental factors influencing business organisation.
c) Ability to demonstrate Competitive structure analysis for select industry.
d) Ability to explain the impact of fiscal policy and monetary policy on business.
e) Ability to analyse the impact of economic environmental factors on business.

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 2.3
Name of the Course: Business Mathematics

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs**	**56 Hrs**

Pedagogy: Classroom's lecture, tutorials, Problem solving.

Course Outcomes: On successful completion of the course, the students will demonstrate

a) The Understanding of the basic concepts of business maths and apply them to create solve and interpret application problems in business
b) Ability to solve problems on various types of equation.
c) Ability to solve problems on Matrices and execute the laws of indices, law of logarithm and evaluate them.
d) Ability to apply the concept of simple interest and compound interest bills discounted etc. and apply them in day-to-day life.
e) Ability to solve problems on Arithmetic progression, Geometric progression and construct logical application of these concepts.

Name of the Program: Bachelor Business Administration (BBA)
Course Code: BBA.2.6 (OEC)
Name of the Course: People Management

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course outcome: On successful completion of the course, student will demonstrate:

1. Ability to examine the difference between People Management with Human resource Management
2. Ability to explain the need for and importance of People Management.
3. Ability to explain role of manager in different stages of performance management process
4. Ability to list modern methods of performance and task assessment.
5. Ability to analyse the factors influencing the work life balance of an working individual.

Name of the Program: Bachelor of Business Administration Course Code: BBA 2.6 (OEC) Name of the Course: Functional Areas of Management		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
3 Credits	**3 Hrs**	**45 Hrs**
Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.		
Course Outcomes: On successful completion Student will demonstrate ; a) Understand the concepts and functions of marketing and analyzing the Marketing Mix. b) Ability to describe Man power Planning and Implement Recruitment, Selection process and Evaluate Performance c) Understanding various functions of Financial Management d) Understanding the basics of production and operations management e) Understanding the need for Information Systems in organization.		

Name of the Program: BBA Course Code: BBA 3.1 Name of the Course: COST ACCOUNTING		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs.**	**56 Hrs.**
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the students will - • Be able to demonstrate an understanding of the elements of cost and prepare a costsheet. • Be able to prepare material related documents, understand the management of stores and issue procedures. • Develop the ability to calculate Employee costs. • Able to classify, allocate apportion overheads and calculate overhead absorptionrates. • Understand and reconcile cost and financial accounts.		

Name of the Program: BBA Course Code: BBA 3.2 Name of the Course: ORGANIZATIONAL BEHAVIOUR		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs.**	**56 Hrs.**
Pedagogy: Classroom lectures, Tutorials, Role Plays and Case study method.		

Course Outcomes: On successful completion of the course, the Students will:

- Demonstrate an understanding of the role of OB in business organization.
- Demonstrate an ability to understand individual and group behavior in an organization.
- Be able to explain the effectiveness of organizational change and development of organisation.
- Demonstrate an understanding of the process of organizational development andOD Interventions.

Name of the Program: BBA
Course Code: BBA 3.3
Name of the Course: STATISTICS FOR BUSINESS DECISIONS

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures, Tutorials, and Problem Solving.

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

- To understand the basic concepts in statistics.
- To classify and construct statistical tables.
- To understand and construct various measures of central tendency, dispersion and skewness.
- To apply correlation and regression for data analysis.

Name of the Program: BBA
Course Code: BBA 3.5
Name of the Course: SOCIAL MEDIA MARKETING (OEC)

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.

Pedagogy: Classroom lectures, Tutorials, and Case study method.

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

- Understand social media marketing goals for successful online campaigns.
- Analyze the effective social media marketing strategies for various types of industries and businesses.
- Design social media content and create strategies to optimize the content's reachto the target audience.
- Appraise the reach and track progress in achieving social media objectives witha variety of measurement tools and metrics.
- Design a suitable social media campaign for the business goals.

Name of the Program: BBA Course Code: BBA 3.5 Name of the Course: RURAL MARKETING (OEC)		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
3 Credits	**3 Hrs.**	**42 Hrs.**
Pedagogy: Classroom lectures, Tutorials, and Case study method.		
Course Outcomes: On successful completion of the course, the Students willdemonstrate • Describe the importance and application of various concepts of rural marketing. • Demonstrate the appropriate selection of the segmentation, targeting and positioning strategies along with the environmental factors that influence rural consumers' buying behaviour. • Design a Pricing Strategy that suits the characteristics of rural products and the stage in the product life cycle. • Formulate the appropriate marketing communication and rural distribution channel plans to promote and deliver the rural products. • Appraise the recent trends in rural marketing and the application of digital technology in rural marketing.		

Name of the Program: BBA Course Code: BBA 4.1 Name of the Course: MANAGEMENT ACCOUNTING		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs.**	**56 Hrs.**
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students willdemonstrate: • Explain the application of management accounting and various tool used • Make inter – firm and inter- period comparison of financial statements • Analyse financial statements using various ratios for business decisions. • Prepare fund flow and cash flow statements • Prepare different types of budgets for the business.		

Name of the Program: BBA Course Code: BBA 4.2 Name of the Course: BUSINESS ANALYTICS		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
4 Credits	**4 Hrs.**	**56 Hrs.**
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		

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

- Understand types of analytics and data models
- Understand the role of data indecision making, sources and types of Data.
- Ability to analyse data using different data analytic tools and draw inferences.
- Understand applied statistics for business problems.
- Demonstrate visualization of data.

Name of the Program: BBA
Course Code: BBA 4.2
Name of the Course: FINANCIAL MARKETS & SERVICES

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures and Tutorials

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

- Understand the financial system, Institutions, financial markets and services.
- Analyze the concepts relevant to Indian financial market and relevance.
- Understand concept of financial services, types and functions.
- Understand the types of financial Instruments.
- Demonstrate an understanding the functioning of stock markets.

Name of the Program: BBA
Course Code: BBA 4.3
Name of the Course: FINANCIAL MANAGEMENT

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures, Tutorials, and Problem Solving.

Course Outcomes: On successful completion of the course, the Students will able:

- To identify the goals of financial management.
- To apply the concepts of time value of money for financial decision making.
- To evaluate projects using capital budgeting techniques.
- To design optimum capital structure using EBIT and EPS analysis.
- To evaluate working capital effectiveness in an organization.

Name of the Program: BBA
Course Code: BBA 4.6
Name of the Course: BUSINESS LEADERSHIP SKILLS (OEC)

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.

Pedagogy: Classrooms lecture, Tutorials, and Problem Solving.

Name of the Program: BBACourse Code: BBA 4.6 Name of the Course: PERSONAL WEALTH MANAGEMENT		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
3 Credits	**3 Hrs.**	**42 Hrs.**
Pedagogy: Classroom lectures and Tutorials		

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

- Demonstrate an understanding of the importance of Wealth Management and Financial Planning in personal life.
- Identify the Real Estate Investment Routes and understand the tax planning that minimises tax burden.
- Select and Apply the Asset Allocation strategies to balance between Risk andReturn.
- Anlayse the Retirement Planning Benefits and retirement strategies to provideregular income for life.
- Understand the basic principles and importance various insurance polices.

Course Outcomes: On successful completion of the course, the Students will able:

- To understand the significance of leadership skills for effective people management.
- To increase the comprehension of leadership through various leadership theories.
- To analyse different leadership styles, types, patterns and functions.
- To demonstrate an understanding of various leadership approaches for effective management of people.
- To demonstrate an awareness of ethical leadership.

Name of the Program: BBACourse Code: BBA 4.7 Name of the Course: FINANCIAL LITERACY AND INVESTMENT AWARENESS		
Course Credits	**No. of Hours per Week**	**Total No. of Teaching Hours**
3 Credits	**3 Hrs.**	**42 Hrs.**
Pedagogy: Classroom lectures and Tutorials		

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

- Provide the foundation for financial decision making.
- List out various savings and investment alternatives for a common man.
- Give a detailed overview of stock market and stock selection
- Orient the learners about mutual funds and the criteria for selection

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA5.1
Name of the Course: Production and Operations Management

Course Credits	No. of hours per week	Total No. of Teaching hours
4 Credits	4 hours	56 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc.,

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

a) Understand ever growing importance of Production and Operations Management in uncertainbusiness environment.
b) Gain an in-depth understanding of Plant Location and Layout
c) Appreciate the unique challenges faced by firms in Inventory Management.
d) Understand the subject as to Production Planning and Control.
e) Develop skills to operate competitively in the current business scenario.

Name of The Program: Bachelor of Business Administration (BBA)
Course Code: BBA5.2
Name of the Course: Income Tax – I

Course Credits	No. of hours perweek	Total No. of Teaching hours
4 Credits	4 hours	56 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc..

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

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

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 5.3
Name of the Course: Banking Law and Practice

Course Credits	No. of hoursper week	Total No. of Teaching hours

4 Credits	4 hours	56 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar,Case studies & field work etc.,

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

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

Name of the Program: Bachelor of Business Administration **(BBA)**

Finance Elective

Course Code: FN1

Name of the Course: Advanced Corporate Financial Management

Course Credits	No. of hours perweek	Total No. of Teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & fieldwork etc.,

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

a) Understand and determine the overall cost of capital.
b) Comprehend the different advanced capital budgeting techniques.
c) Understand the importance of dividend decisions and dividend theories.
d) Evaluate mergers and acquisition.
e) Enable the ethical and governance issues in financial management.

Name of the Program: Bachelor of Business Administration (BBA)

Marketing Elective

Course Code: MK 1

Name of the Course: Consumer Behavior

Course Credits	No. of hours per week	Total No. of Teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc.,

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

a) Understanding of consumer behaviour towards products, brands andservices.
b) Distinguish between different consumer behaviour influences andtheir relationships.
c) Establish the relevance of consumer behaviour theories and conceptsto marketing decisions.
d) Implement appropriate combinations of theories and concepts.
e) Recognize social and ethical implications of marketing actions onconsumer behaviour.

Name of the Program: Bachelor of Business Administration (BBA)

Human Resource Elective

Course Code: HRM1

Name of the Course: Compensation and Performance Management

Course Credits	No. of hoursperweek	Total No. of Teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & field work etc.,

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

a) Understand the concepts of Compensation management.
b) Describe job evaluation and its methods.
c) Evaluate the different methods of wages.
d) Describe performance management and methods of performance management.
e) Preparation of Payroll.

Name of the Program: Bachelor of Business Administration (BBA)

DATA ANALYTICS
Course Code: DA 1
Name of the Course: Financial Analytics

Course Credits	No. of hours per week	Total No. of Teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & fieldwork etc.

Course Outcomes: On successful completion student will demonstrate:

a) Analyze and model financial data.
b) Access the different open-source domains.
c) Evaluate and build model on time series data.
d) Execute the statistical analysis using python.

Name of the Program: Bachelor of Business Administration (BBA)

Retail ManagementCourse Code: RM 1
Name of the Course: Fundamentals of Retail Management

Course Credits	No. of hours per week	Total No. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar &field work etc.,

Course Outcomes: On successful completion student will demonstrate:

a) Understand the Retail Business.
b) Understand the business operations in Retailing.
c) Formulate the retail strategies of Retail Business.
d) Apply the Retailing principles and theories.
e) Explore the career opportunities in the Retail sector.

Name of the Program: Bachelor of Business Administration (BBA)

Logistic and Supply Chain ManagementCourse Code:
LSCM 1
NAME OF THE COURSE: Freight Transport Management

Course Credits	No. of hoursper week	Total No. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies &field work etc.

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

a) Understand the different functions of Commercial transport.
b) Analyse pricing and pricing strategy.
c) Understand transport administration.
d) Understand of transport and export documentations.

Name of the Program: Bachelor of Business Administration (BBA)

Course Code: BBA 5.6 (A) Vocational

Name of the Course: Information Technology for Business

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs.**	**56 Hrs.**

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will demonstrate ;

a) Understand the fundamentals of information technology
b) Understand usage of information technology in business.
c) Learn core concepts of computing and modern systems
d) Applications of Excel and SQL.
e) Awareness about latest information.

Name of the Program: Bachelor of Business Administration (BBA)

Course Code: BBA 5.6 (B)

Name of the Course: Digital Marketing

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**(2+0+2) 4 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,

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

a) Gain knowledge on Digital Marketing and strategies.
b) Gain knowledge on Email marketing and Content marketing.
c) Gain knowledge on Social Media Marketing and Web Analytics.
d) Gain knowledge on YouTube Advertising & Conversions.

Name of the Program: Bachelor of Business Administration (BBA)

Course Code: BBA 5.7 SEC-VB

Name of the Course: Employability Skills

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**3 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, Case studies, Group discussion, Seminar & field work etc.,

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

a) Have the information on various vacancies notified by Central and State Government authorities as well as Private organizations.
b) Solve the problems on quantitative aptitude, logical reasoning and analytical ability.
c) Demonstrate the basic computer skills like MS word, MS excel, MS PPTs. Email etiquettes Etc.,
d) Exhibit the communication and leadership skills.
e) Conduct self SWOC analysis and set his career goals.

Name of the Program: Bachelor of Business Administration (BBA.)
Course Code: BBA. 6.1
Name of the Course: Business Law

Course Credits	No. of hours per week	Total No. of teaching hours
4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures, Case studies, Tutorial classes, Group discussion, Seminar &field work etc.,

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

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

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 6.2
Name of the Course: Income Tax – II

Course Credits	No. of hours per week	Total No. of Teaching hours
4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Case studies & field work etc.,

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

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

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 6.3
Name of the Course: International Business

Course Credits	No. of Hours per Week	Total No. of Teaching Hours

4 Credits	4 Hrs.	56 Hrs.

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & field work etc.,

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

a) Understand the concept of International Business.
b) Differentiate the Internal and External International Business Environment.
c) Understand the difference MNC and TNC
d) Understand the role of International Organisations in International Business.
e) Understand International Operations Management.

Name of the Program: Bachelor of Business Administration **(BBA)**

Finance Elective

Course Code: FN2

Name of the Course: Security Analysis and Portfolio Management

Course Credits	No. of hours per week	Total No. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, Case studies, Tutorial classes, Group discussion,Seminar &field work etc.,

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

a) Understand the concept of basics of Investment.
b) Evaluate the different types of alternatives.
c) Evaluate the portfolio and portfolio management.
d) Understand the concept of risk and returns
e) Gain the knowledge of fundamental and technical analysis.

Name of the Program: Bachelor of Business Administration (BBA)

Marketing Elective

Course Code: MK 2

Name of the Course: Advertising and Media Management

Course Credits	No. of hours per week	Total No. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & fieldwork etc.,

Course Outcomes: On successful completion of the course, the students will beableto:

a) Understand the nature, role, and importance of IMC in marketing strategy
b) Understand effective design and implementation of advertising strategies
c) Present a general understanding of content, structure, and appeal ofadvertisements
d) Understand ethical challenges related to responsible management of advertisingand brand strategy.
e) Evaluate the effectiveness of advertising and agencies role

Name of the Program: Bachelor of Business Administration (BBA)

Human Resource Elective

Course Code: HRM 2

Name of the Course: Human Resources Development

Course Credits	No. of hours perweek	Total No. of Teaching hours
3 credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & field work etc.,

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

a) Understand the need of HRD.
b) Comprehend the framework of HRD.
c) Know the models for evaluating the HRD programs.
d) Comprehend the need for employee counseling.
e) Apprehend the HR performance.

Name of the Program: Bachelor of Business Administration (BBA)

DATA ANALYTICS

Course Code: DA 2

Name of the Course: Marketing Analytics

Course Credits	No. of hours per week	Total no. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies& field work etc.,

Course Outcomes: On successful completion student will demonstrate:

a) Understand the importance of marketing analytics for forward looking andsystematic allocation of marketing resources
b) Apply marketing analytics to develop predictive marketing dashboard fororganization
c) Analyse data and develop insights to address strategic marketing challenges
d) Execute the models on Predictions and Classifications on R Software.Know the applications of analytics in marketing.

Name of the Program: Bachelor of Business Administration (BBA)

Retail Management

Course Code: RM 2

Name of the Course: Retail Operations Management

Course Credits	No. of hours per week	Total No. of teaching hours
3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, Case studies, Group discussion, Seminar &fieldwork etc.,

Course Outcomes: On successful completion student will demonstrate:

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

Name of the Program: Bachelor of Business Administration (BBA)

Logistic and Supply Chain Management

Course Code: LSCM 2

NAME OF THE COURSE: Sourcing for Logistics and Supply ChainManagement

Course Credits	No. of hours perweek	Total No. of Teaching hours

3 Credits	3 hours	45 hours

Pedagogy: Classroom lectures, tutorials, Group discussion, Seminar, Casestudies & fieldwork etc.,

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

a) Understand the role of sourcing in logistics and supply chain management, andits impact on overall business performance.
b) Analyze and evaluate sourcing strategies and decisions, including make-or-buy,insourcing vs. outsourcing, and supplier selection criteria.
c) Develop effective supplier relationship management skills, includingnegotiation, communication, and collaboration.
d) Apply sourcing best practices, including risk management, sustainability, andethical sourcing.
e) Evaluate the impact of technology and innovation on sourcing, and apply relevant tools and techniques to optimize sourcing processes and outcomes.

Name of the Program: Bachelor of Business Administration (BBA)Course Code: BBA 6.6 (A) Vocational
Name of the Course: Goods and Services Tax

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	**4 Hrs.**	**56 Hrs.**

Pedagogy: Classroom's lecture, tutorials, Group discussion, Seminar, Case studies.

Course Outcomes: On successful completion Student will demonstrate

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

Name of the Program: Bachelor of Business Administration (BBA)
Course Code: BBA 6.6 (B)
Name of the Course: Enterprise Resource Planning

Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	**(2+0+2) 4 Hrs**	**45 Hrs**

Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion,Seminar & field work etc.,

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

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

Course Code	Course Title
DSC-1	FINANCIAL ACCOUNTING – I

1. To enable the students to understand the system of preparing financial statement of sole trading concern
2. To create an awareness in the students about Financial Reporting Standards.
3. The students will be able to prepare and analyses financial statements of sole trading concerns.

Course Code	Course Title
DSC-2	Management Principles and Applications

1. To enable the students to understand the various functions of management and various types of organizations
2. To create an awareness in the students about application of management principles in business organizations.
3. The students will be able to understand and identify the different theories of organization, which are relevant in the present context.
4. Compare and chose the different types of motivation factors and leadership styles.

Course Code	Course Title
DSC-3	Principles of Marketing

1. To enable students to understand the basic concepts and principles of Marketing.
2. Students will be able to learn the application of Principles of marketing by business firms

Course Code	Course Title
OEC-1	Basics of Accounting

1. To enable the students to understand the basics of accounting, need for accounting inbusiness and the system of preparing financial statements.
2. To create an awareness in thestudents about Financial Reporting Standards
3. The students will be able to prepare subsidiary books and to prepare and analyze financialstatements of sole trading concern.

Course Code **Course Title**

OEC-2 **Managing Workforce**

1. To enable the students to understand the basics of managing workforce at work place andknow the process of selection, training and development.
2. The students will be able to manage themselves at work place and know the nuances ofmanaging human resources.

Course Code **Course Title**

DSC **Advance Financial Accounting**

1) Understand & compute the amount of claims for loss of stock & loss of Profit.
2) Learn various methods of accounting for hire purchase transactions.
3) Deal with the inter-departmental transfers and their accounting treatment.
4) Demonstrate various accounting treatments for dependent & independent branches.
5) Prepare financial statements from incomplete records.

Course Code **Course Title**

DSC **Law and Practice of Banking**

1) Summarize the relationship between Banker & customer and different types of functions of banker.
2) Analyse the role, functions and duties of paying and collecting banker.
3) Make use of the procedure involved in opening and operating different accounts.
4) Examine the different types of negotiable instrument & their relevance in the present context.
5) Estimate possible developments in the banking sector in the upcoming days.

Course Code **Course Title**

DSC **Business mathematics**

1) Understand the number system and indices applications in solving basic business problems
2) Apply concept of commercial arithmetic concepts to solve business problems
3) Make use of theory of equation in solving the business problems in the present context.
4) Understand and apply the concepts of Set Theory, Permutations & Combinations and Matrices solving business problems.
5) Apply measurement of solids in solving simple business problems.

Course Code **Course Title**

DSC **Corporate Administration**

1) Understand the framework of Companies Act of 2013 and different kind of companies.
2) Identify the stages and documents involved in the formation of companies in India.
3) Analyse the role, responsibilities and functions of Key management Personnel in Corporate Administration.
4) Examine the procedure involved in the corporate meeting and the role of company secretary in the meeting.
5) Evaluate the role of liquidator in the process of winding up of the company.

Course Code **Course Title**

OEC **Financial Enviornment**

1) Understand the fundamentals of Indian Economy and its significance.
2) Evaluate the impact of monetary policy on the stakeholders of the Economy.
3) Assess the impact of fiscal policy on the stakeholders of the Economy.
4) Examine the status of inflation, unemployment and labour market in India.
5) Inference the financial sector reforms in India.

Course Code	Course Title
OEC	Investing in Stock Market

1) Explain the basics of investing in the stock market, the investment environment as well as risk & return.
2) Analyse Indian securities market.
3) Examine EIC framework and conduct fundamental analysis.
4) Perform technical analysis.
5) Invest in mutual funds market.

Course Code	Course Title
DSC	Financial Management

1) Understand the role of financial managers effectively in an organization.
2) Apply the compounding & discounting techniques for time value of money.
3) Take investment decision with appropriate capital budgeting techniquesfor investment proposals.
4) Understand the factors influencing the capital structure of an organization.
5) Estimate the working capital requirement for the smooth running of the business

Course Code	Course Title
DSC	Income tax Law and Practice

1) Comprehend the procedure for computation of Total Income and tax liability of an individual.
2) Understand the provisions for determining the residential status of an Individual.
3) Comprehend the meaning of Salary, Perquisites, Profit in lieu of salary, allowances and various retirement benefits.
4) Compute the income house property for different categories of house property.
5) Comprehend TDS & advances tax Ruling and identify the various deductions under section 80.

Course Code	Course Title
DSC	**Principal and Practice of Auditing**

1) Understand the conceptual framework of auditing.
2) Examine the risk assessment and internal control in auditing
3) Comprehend the relevance of IT in audit and audit sampling for testing.
4) Examine the company audit and the procedure involved in the audit of different entities.
5) Gain knowledge on different aspect of audit reporting and conceptual framework applicable on professional accountants.

Course Code	Course Title
DSC	**Indian Accounting Standard -01**

1) Understand the need and benefits of accounting standards.

2) Prepare the financial statements as Indian Accounting standards.

3) Comprehend the requirements of Indian Accounting Standards for recognition, measurement and disclosures of certain items appear in financial statements

4) Understand the Accounting Standards for Items that do not Appear in Financial Statements

Course Code	Course Title
DSC	**Financial Institution and Markets**

1) Understand the structure of Indian financial system and its constituents.
2) Outline the role of capital and money market in economic development.
3) Comprehend primary and secondary market and its relevance in capital formation.
4) Appraise the role played by banking and development financial institutions in

economic development so far.

5) Understand the different types of NBFCs and their contribution.

Course Code	Course Title
DSC	Human Resource Development

1) Understand the need of HRD.
2) Comprehend the framework of HRD.
3) Know the models for evaluating the HRD programs.
4) Comprehend the need for employee counselling.
5) Apprehend the HR performance

Course Code	Course Title
SEC	Retail Mangement

1) Understand the contemporary of retail management, issues, strategies and trends in Retailing.
2) Utilize the theories and strategies of retail planning.
3) Perceive the role and responsibilities of store manager and examine the visual merchandising and its techniques in the present context.
4) Prioritize the factors to be considered while fixing the price in retailing.
5) Comprehend the emerging trends in Retail Industry.

Course Code	Course Title
SEC	GST Law and Practice

1) Comprehend the concepts of Goods and Services tax.
2) Understand the fundamentals of GST.
3) Analyse the GST Procedures in the Business.

4) Know the GST Assessment and its computation.

Course Code	Course Title
SEC	Digital Marketing

1) Gain knowledge on Digital Marketing , Email marketing and Content marketing.
2) Understand Search Engine Optimization tools and techniques.
3) Gain skills on creation of Google AdWords & Google AdSense.
4) Gain knowledge on Social Media Marketing and Web Analytics.
5) Gain knowledge on YouTube Advertising & Conversions

Course Code	Course Title
DCS	Advance Financial Management

1) Understand and determine the overall cost of capital.
2) Comprehend the different advanced capital budgeting techniques.
3) Understand the importance of dividend decisions.
4) Evaluate mergers and acquisition.
5) Enable the ethical and governance issues in financial management.

Course Code	Course Title
DCS	Income Tax law and Practice

1) Understand the procedure for computation of income from business and other Profession.
2) the provisions for determining the capital gains.
3) Compute the income from other sources.
4) Demonstrate the computation of total income of an Individual.

5) Comprehend the assessment procedure and to know the power of income tax authorities.

Course Code	Course Title
DCS	**Management Accounting**

1) Demonstrate the significance of management accounting in decision making.

2) Analyse and interpret the corporate financial statements by using various techniques.

3) Compare the financial performance of corporates through ratio analysis.

4) Understand the latest provisions in preparing cash flow statement.

5) Comprehend the significance of management audit and examine the corporate reports of Management Review and Governance.

Course Code	Course Title
SEC	**Indian Accounting Standard -2**

1) Understand the preparation of consolidated financial statements as per Ind AS.
2) Learn the disclosures in the financial statements
3) Understand the latest provisions of measurement-based accounting policies.
4) Comprehend the Accounting and Reporting of Financial Instruments.
5) Analyse the Revenue based accounting standard.

Course Code	Course Title
SEC	**Investment Management**

1) Understand the concept of investments, its features and various instruments.

2) Comprehend the functioning of secondary market in India.

3) Underline the concept of risk and return and their relevance in purchasing and selling of securities.

4) Illustrate the valuation of securities and finding out the values for purchase and sale of securities.

5) Demonstrate the fundamental analysis to analyse the company for purchase and sale of securities and technical analysis for trading in the share market

Course Code	Course Title
SEC	Cultural Diversity at work Place

1) Understand, interpret question reflect upon and engage with the notion of "diversity".

2) Recall the cultural diversity at work place in an organization.

3) Support the business case for workforce diversity and inclusion.

4) Identify diversity and work respecting cross cultural environment.

5) Assess contemporary organizational strategies for managing workforce diversity and inclusion.

Course Code	Course Title
SEC	Human Resource Analytics

1) Understand the role of Analytics in Human Resource.

2) Identify a list of HR metrics relevant to an organization's mission or goals.

3) Apply best practices for using HR analytics to support making datadriven decisions.

4) Demonstrate the use of Analytical techniques to analyse and interpret HR data

Course Code	Course Title
SEC	Customer Relationship Management

1) To be aware of the nuances of customer relationship.

2) To analyze the CRM link with the other aspects of marketing.

3) To impart the basic knowledge of the Role of CRM in increasing the sales of the company.

4) To make the students aware of the different CRM models in service industry.

5) To make the students aware and analyze the different issues in CRM

Course Code	**Course Title**
SEC	**Assessment of Persons other than Individuals and Filing of ITRs**

1) Understand the calculation of Depreciation and allowance
2) Comprehend the assessment of partnership Firms and determine the tax liability.
3) Comprehend the assessment of corporate entities and determine the tax liability.
4) Equip with understanding of intensive knowledge on analysis of all forms of ITR
5) Forms along with the Overview ITR Forms and e-filing.

Course Code	**Course Title**
SEC	**E-Commerce**

1) Comprehend the concepts of E-commerce
2) Understand the e-retailing benefits and key success factors
3) Analyse the benefits of EDI
4) To understand Cyber security.
5) Know the Issues in E-commerce.

Course Title/Code: **Cytology, Genetics and Infectious Diseases**	Course Credits: **4**
Course Code: **DSCC5Z00T1**	L-T-P per week: 4-0-0
Total Contact Hours**: 56**	Duration of ESA: 3 Hours
Formative Assessment Marks: **40**	Summative AssessmentMarks:**60**

I Semester Zoology

Core Course prerequisite: To study Zoology in undergraduate, student must have studied Biology or equivalent subject in Class 12.

Course Outcomes (COs):

At the end of the course the student should be able to understand:

1. The structure and function of the cell organelles.
2. The chromatin structure and its location.
3. The basic principle of life, how a cell divides leading to the growth of an
4. Organism and also reproduces to form a new organisms.
5. How a cell communicates with its neighboring cells.
6. The principles of inheritance, Mendel‘s laws and the deviations.
7. How environment plays an important role by interacting with genetic factors.
8. Detect chromosomal aberrations in humans and study of pedigree analysis.

I Semester Zoology

Zoology Core Lab Course Content

Course Title: Cell Biology &Cytogenetics Lab	Course Credits:**2**
Course Code: **DSCC5Z00P1**	L-T-P per week: 0-0-4
Total Contact Hours**: 56**	Duration of ESA: 3 Hours
Formative AssessmentMarks: **20**	Summative AssessmentMarks:**30**

Course Outcomes (COs):

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

1. To use simple and compound microscopes.
2. To prepare stained slides to observe the cell organelles.
3. To be familiar with the basic principle of life, how a cell divides leading to the growth of an organismand also reproduces to form new organisms.
4. The chromosomal aberrations by preparing karyotypes.
5. How chromosomal aberrations are inherited in humans by pedigree analysis in families. The antigen-antibody reaction

I Semester Zoology

Minor Course Content

Semester: **I Semester, B. Sc., (Hons) Zoology**

Course Title:**BIOLOGY OF NON-CHORDATES**	Course Code: **MDC5ZOOT1**
Course Type: **Minor Discipline Core Theory, L-T-P: 4-0-0**	Course Credits: **4**
Total Contact Hours: **56**	Duration of ESA: **3 Hrs**
Formative Assessment Marks: **40**	Summative Assessment Marks: **60**

Course Outcomes (COs):

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

1. Learn the structural biology of non-chordates through their adaptive features.
2. Study the functional biology of non-chordates through their body organization and its function.
3. Comprehend identification of species and their evolutionary relationships.
4. Enhancement of research skills like critical thinking.
5. Develop abilities required for industrial employment as well as self-employment.

I Semester Zoology

Minor Course Lab Content

Course Title: **Lab onBIOLOGY OF NON-CHORDATES**	Course Credits: **02**
Course Type: **Minor Discipline Core Practical, L-T-P: 0-0-4**	Corse Code: **MDC5ZOOP1**
Total Contact Hours: **56**	Duration of ESA: **03 Hours**
Formative Assessment Marks: **20**	Summative Assessment Marks: **30**

Course Outcomes (Cos):

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

1. Understand basics of classification of non-chordates.
2. Learn the diversity of habit and habitat of these species.
3. Develop the skills to identify different classes and species of animals.
4. Know uniqueness of a particular animal and its importance
5. Enhancement of basic laboratory skill like keen observation and drawing.

I Semester Zoology

Skill Enhancement Course in Zoology

Course Content

Course Title: Vermi culture Course Code: VEC5ZOOP1	Course Credits: 2
Total Contact Hours: 56 Hours	Duration of ESA: 3 Hrs
Formative Assessment Marks:20	Summative Assessment Marks: 30

Course Outcomes (COs):

At the end of the course the student:

1. Understands the importance of earthworms in maintaining soil quality.
2. Learns that the vermicomposting is an effective organic solid waste management method.
3. Gets acquainted with the importance of earthworms in agro-based economic activity.
4. Vermicomposting leads to organic farming and healthy food production.
5. Vermicomposting may be taken up as a small scale industry by the farmers and unemployed youth.
6. Get jobs in teaching institutions or vermiculture units as technicians.
7. Learn the concept of vermicomposting as bio fertilizers thus student can become an entrepreneur after completion of the course.
8. Best opportunity for self-employment and lifelong learning with farmers.

II Semester Zoology

Core Course Content

Course Title: **Biochemistry and Physiology**	Course Credits: **4**
Course Code: **DSCC5Z00T2**	L-T-P per week: **4-0-0**
Total Contact Hours**: 56**	Duration of ESA: **3 Hours**
Formative Assessment Marks: **40**	Summative Assessment Marks:**60**

Course outcomes:

The student at the completion of the course will learn:

1. To develop a deep understanding of structure of biomolecules like proteins, lipids and carbohydrates.
2. How simple molecules together form complex macromolecules.
3. To understand the thermodynamics of enzyme catalyzed reactions.
4. Mechanisms of energy production at cellular and molecular levels.
5. To understand various functional components of an organism.
6. To explore the complex network of these functional components.

To comprehend the regulatory mechanisms for maintenance of function in the body

II Semester Zoology

Core Course Lab Content

Course Title/Code: **Biochemistry andPhysiology**	Course Credits: **2**
Course Code: **DSCC5Z00P2**	L-T-P per week: 0-0-4
Total Contact Hours**: 56**	Duration of ESA: 3 Hours
Formative Assessment Marks: **20**	Summative Assessment Marks:**30**

Course Outcomes (COs):

At the end of the course the student should be able to

1. Understand:Basic structure of biomolecules through model making.
2. Develop the skills to identify different types of blood cells.
3. Enhance basic laboratory skill like keen observation, analysis and discussion.Learn the functional attributes of biomolecules in animal body.
4. Know uniqueness of enzymes in animal body and their importance through enzyme kinetics.

II Semester Zoology

Minor Course Content

Course Title: **PAPER I-BIOLOGY OF CHORDATES**	Course Code: **MDC5ZOOT2**
Course Type: **Minor Discipline Core Theory, L-T-P: 4-0-0**	Course Credits: **4**
Total Contact Hours: 5**6**	Duration of ESA: **3 Hrs**
Formative AssessmentMarks:**40**	Summative Assessment Marks: **60**

Course Outcomes (COs):

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

1. Learn the structural biology of Chordates through their adaptive features.
2. Study the functional biology of Chordates through their body organization and functions.
3. Comprehend the identification of species and their evolutionary relationships.
4. Enhancement of research skills like critical thinking.
5. Develop abilities required for industrial employment as well as self-employment.

II Semester Zoology

Minor Core Course Lab Content

Course Title:**Lab on Biology of Chordates, L-T-P: 0-0-4**	Course Credits: **2**
Total Contact Hours: 5**6**	Duration of ESA: **3 Hours**

Formative AssessmentMarks:**20**	Summative AssessmentMarks: **30**

Course Outcomes (COs):

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

1. Understand basics of classification of Chordates.
2. Learn the diversity of habit and habitat of animal species.
3. Develop the skills to identify different classes and orders of Chordates.
4. Know uniqueness of particular animal and its importance
5. Enhancement of basic laboratory skill like keen observation and drawing.

II Semester Zoology

Skill Enhancement Course Content

Course Title: Sericulture Course Code: VEC5ZOOP2	Course Credits: 2
Total Contact Hours: 56 Hours	Duration of ESA: 3 Hrs.
Formative Assessment Marks: 20	Summative Assessment Marks: 30

Course Outcomes (COs):

At the end of the course the student acquires the following knowledge:

1. Sericulture is an agro-based industry which gives economic empowerment to the students.
2. Sericulture may be taken up as a small scale industry by the small farmers and unemployed youth.
3. Get jobs in teaching profession, silk board and other Govt. institutions as technicians.
4. Student can be self-employed after successful completion of the course.

III Semester Zoology

Core Course Content

Course Title/Code: **Molecular Biology, Bioinstrumentation& Techniques in Biology**	Course Credits: **4**
Course Code: **DSCC5ZOOT3**	L-T-P per week: 4-0-0
Total Contact Hours**: 56**	Duration of ESA: 3 Hours
Formative Assessment Marks: 4**0**	Summative Assessment Marks:**60**

Course Outcomes (COs):

At the end of the course the student should be able to understand:

1. After successful accomplishment of the course, the learners will be able to acquire better understanding and comprehensive knowledge regarding most of the essential aspects of Molecular Biology subject which in turn will provide a fantastic opportunity to develop

professional skill related to the field of molecular biology.

2. The course will mainly focus on the study of principal molecular events of cell incorporating DNA Replication, Transcription and Translation in prokaryotic as well as eukaryotic organisms.
3. Acquiring knowledge on instrumentation and techniques in biology.

III Semester Zoology

Core Course LabContent

Course Title: **Molecular Biology, Bioinstrumentation and Techniques in Biology**	Course Credits: **2**
Course Code: DSCC5ZOOP3	L-T-P per week: 0-0-4
Total Contact Hours**: 56**	Duration of ESA: 3 Hours
Formative Assessment Marks: **25**	Summative Assessment Marks:**25**

Course Outcomes (COs):

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

1. At the end of the course, students will be able to understand the applications of biophysics and principle involved in bio-instruments.
2. Understand the methodology involved in bio techniques.
3. Students can Demonstrate knowledge and practical skills of using instruments in biology and medical field.
4. They can perform techniques involved in molecular biology and diagnosis of diseases.

IV Semester Zoology

Core Course Content:

Course Title; **Gene Technology Immunology and Computational Biology**	Course Code: **DSCC5ZOOT4**
Course Type: **Discipline Core Theory, L-T-P: 4-0-0**	Course Credits: **4**
Total Contact Hours: **56**	Duration of ESA: **3 Hrs.**
Formative Assessment Marks: **40**	Summative Assessment Marks:**60**

Course Outcomes (COs):

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

1. Acquaint knowledge on versatile tools and techniques employed in genetic engineering and recombinant DNA technology.
2. An understanding on application of genetic engineering techniques in basic and applied experimental biology.
3. To acquire a fundamental working knowledge of the basic principles of immunology.
4. To understand how these principles, apply to the process of immune function.

5. Use, and interpret results of, the principal methods of statistical inference and design; helps to communicate the results of statistical analyses accurately and effectively; helps in usage of appropriate tool of statistical software.

IV Semester Zoology
Core Lab Content:

Course Title: **Gene Technology, Immunology and Computational Biology**	Course Credits: **02**
Course Type: **Minor Discipline Core Practical, L-T-P: 0-0-4**	Corse Code: DSCC5ZOOP4
Total Contact Hours: **56**	Duration of ESA: 3 **Hours**
Formative Assessment Marks: **25**	Summative Assessment Marks: **25**

Course Outcomes (COs):

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

1. Accurately, safely and appropriately use all the equipment regularly used in Molecular Biology(DNA manipulation, including balances, pipettes, electrophoresis and centrifuges).
2. Prepare chemical solution and reagents to the precision appropriate to the task.
3. Demonstrate knowledge of the biochemical basis underpinning the molecular biologytechniques.

V Semester Zoology

Course Title	**Non-Chordates and Economic Zoology (Theory)**		
Course Code:	**ZOOC**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/Exam	**3hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**
Course Pre-requisite(s):			
Course Out comes (COs): After the successful completion of the course, the student will beable to: CO1. Group animals on the basis of their morphological characteristics/structures. CO2. DemonstratecomprehensiveidentificationabilitiesofNon-ChordatediversityCO3.ExplainstructuralandfunctionaldiversityofNon-Chordates CO4.Develop understanding on the diversity of life with regard to protists, nonchordates and chordates.			

CO 5.Examinethe diversity and evolutionary history of a taxon through theconstruction of a basic phylogenetic/cladistics tree.

V Semester Zoology

Course Title	**Non-Chordates and Economic Zoology (Practical)**	Practical Credits	**2**
Course Code	**ZOO C10-P**	Contact Hours	
Formative Assessment	**25Marks**	Summative Assessment	**25Marks**
Course Pre-requisite(s):			

Course Outcomes(COs):

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

1. Understand basics of classification of non-chordates.
2. Learn the diversity of habit and habitat of these species.
3. Develop the skills to identify different classes and species of animals.
4. Know uniqueness of a particular animal and its importance

V Semester Zoology

Course Title	**Chordates and Comparative Anatomy (Theory)**		
Course Code:	**ZOOC11-T**	No. of Credits	**4**
Contact hours	**60Hours**	Duration of SEA/Exam	**2hours**
Formative AssessmentMarks	**40**	Summative AssessmentMarks	**60**
Course Pre-requisite(s):			

Course Outcomes (COs): After the successful completion of the course, the studentwill be able to:
CO1. To demonstrate comprehensive identification abilities of chordate diversityCO2. Able to explain structural and functional diversity of chordate diversity CO3. To understand evolutionary relationship amongst chordates
CO4. To take up research in biological sciences.

CO5. To realize that very similar physiological mechanisms are used in very diverse organisms.

CO6. To Get a flavor of research by working on project besides improving theirwriting skills. It will further enable the students to think and interpret individually.

Course Title	**Chordates & Comparative Anatomy Zoology(Practical)**	Practical Credits	**2**
Course Code	**ZOO C12-P**	Contact Hours	
Formative Assessment	**25Marks**	Summative Assessment	**25Marks**
Course Pre-requisite(s):			
Course Outcomes: 1. Understanding Core competency 2. Understanding Critical thinking 3. Understanding Analytical reasoning 4. Understanding Research skills **5.** Understanding Team work			

V Semester Zoology

VI Semester Zoology

Course Title	**Evolutionary & Developmental Biology (Theory)**		
Course Code:	**ZOOC15-T**	No. of Credits	**4**
Contact hours	**60 Hours**	Duration of SEA/ Exam	**3hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**
CoursePre-requisite(s):			

Course Outcomes(COs): After the successful completion of the course, the student will be able to:

- Understand that by biological evolution we mean that many of the organisms that inhabit the earthtoday are different from those that inhabited it in the past.
- Understand that natural selection is one of several processes that can bring about evolution,although it can also promote stability rather than change.
- Understand how the single cell formed at fertilization forms an embryo and then a full adultorganism.
- Integrate genetics, molecular biology, biochemistry, cell biology, anatomy and physiology duringembryonic development.
- Understand a variety of interacting processes, which generate an organism's heterogeneousshapes, size, and structural features.
- Understand how a cell behaves in response to an autonomous determinant or an external signal,and the scientific reasoning exhibited in experimental life science.

VI Semester Zoology

Course Title	**Environmental Biology, Wildlife Management &Conservations (Theory)**		
Course Code:	**ZOO C17-T**	No. of Credits	**4**
Contact hours	**60Hours**	Duration of SEA/Exam	**Hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

CoursePre-requisite(s):

Course Outcomes (COs):After the successful completion of the course, the student will be able to: CO1. Develop an understanding of how animals interact with each other and their natural environment.

CO2. Develop the ability to use the fundamental principles of wildlife ecology to solve local, regional and national conservation and management issues.

CO3.Develop the ability to work collaborative team-based projects.

CO4.Gain an appreciation for the modern scope of scientific inquiry in the field of wildlife conservationmanagement.

CO5.Develop an ability to analyze, present and interpret wildlife conservation Management in formation.

I Semester BSc Physics

Course Content Semester – I

Mechanics and Properties of Matter

Course Title: Mechanics and Properties of Matter	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60
Model Syllabus Authors: Physics Expert Committee	

Course Outcomes (COs) ***(UGC guidelines)***
CO-1: Will learn fixing units, tabulation of observations, analysis of data (graphical/analytical)
CO-2: Will learn about accuracy of measurement and sources of errors, importance of significant figures.
CO-3: Will know how g can be determined experimentally and derive satisfaction.
CO-4: Will see the difference between simple and torsional pendulum and their use in the determination of various physical parameters.
CO-5: Will come to know how various elastic moduli can be determined.
CO-6: Will measure surface tension and viscosity and appreciate the methods adopted.
CO-7: Will get hands on experience of different equipment.

Semester – II Physics

Course Title: Electricity and Magnetism	Course Credits: 4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60

Course Outcomes (COs)
i. Demonstrate Gauss law, Coulomb's law for the electric field, and apply it to systems of point charges as well as line, surface, and volume distributions of charges.
ii. Explain and differentiate the vector (electric fields, Coulomb's law) and scalar (electric potential, electric potential energy) formalisms of electrostatics.
iii. Apply Gauss's law of electrostatics to solve a variety of problems.
iv. Describe the magnetic field produced by magnetic dipoles and electric currents.
v. Explain Faraday-Lenz and Maxwell laws to articulate the relationship between electric and magnetic fields.

vi.	Describe how magnetism is produced and list examples where its effects are observed.
vii.	Apply Kirchhoff's rules to analyze AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor.
viii.	Apply various network theorems such as Superposition, Thevenin, Norton, Reciprocity, Maximum Power Transfer, etc. and their applications in electronics, electrical circuit analysis, and electrical machines.

Semester – III Physics

Course Content Semester – III Wave Motion and Optics	
Course Title: Wave Motion and Optics	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60

Course Learning Outcomes	
At the end of the course students will be able to:	
i.	Identify different types of waves by looking into their characteristics.
ii.	Formulate a wave equation and obtain the expression for different parameters associated with waves.
iii.	Explain and give a mathematical treatment of the superposition of waves under different conditions, such as, when they overlap linearly and perpendicularly with equal or different frequencies and equal or different phases.
iv.	Describe the formation of standing waves and how the energy is transferred along the standing wave in different applications, and mathematically model in the case of stretched string and vibration of a rod.
v.	Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.
vi.	Describe the different parameters that affect the acoustics in a building, measure it and control it.
vii.	Give the different models of light propagation and phenomenon associated and measure the parameters like the wavelength of light using experiments like Michelson interferometer, interference and thin films.

vii i.	Explain diffraction due to different objects like singles slit, two slits, diffraction of grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.
ix.	Explain the polarization of light and obtain how the polarization occurs due to quarterwave plates, half wave plates, and through the optical activity of a medium.

Semester – IV Physics

Course Content Semester – IV Thermal Physics and Electronics	
Course Title: Thermal Physics and Electronics	Course Credits:4
Total Contact Hours: 52	Duration of ESA: 3 hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60

Course Learning Outcomes	
At the end of the course students will be able to:	
i.	Apply the laws of thermodynamics and analyze the thermal system.
ii.	Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.
iii.	Use the concepts of semiconductors to describe different Semiconductor devices such asdiode transistors, BJT, FET etc and explain their functioning.
iv.	Explain the functioning of OP-AMPS and use them as the building blocks of logic gates.
v.	Give the use of logic gates using different theorems of Boolean Algebra followed by logiccircuits.

Semester – V Physics

Program Name	BSc in Physics	**Semester**	**V**
Course Title	**Classical Mechanics and Quantum Mechanics- I (Theory)**		
Course Code	**PHY C9-T**	**No. of Credits**	**04**
Contact Hours	**60 Hours**	**Duration ofSEA/Exam**	**02 Hours**
Formative Assessment Marks	**40**	**Summative Assessment Marks**	**60**

Course Pre-requisite(s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to

- Identify the failure of classical physics at the microscopic level.
- Find the relationship between the normalization of a wave function and the ability to correctly calculate expectation values or probability densities.
- Explain the minimum uncertainty of measuring both observables on any quantum state.
- Describe the time-dependent and time-independent Schrödinger equation for simple potentials like for instance one-dimensional potential well and Harmonic oscillator.
- Apply Hermitian operators, their eigenvalues and eigenvectors to find various commutation and uncertainty relations.

Semester – V Physics

Program Name	BSc in Physics	**Semester**	**V**
Course Title	**Elements of Atomic, Molecular & Laser Physics (Theory)**		
Course Code	**PHY C11-T**	**No. of Credits**	**04**
Contact Hours	**60 Hours**	**Duration of SEA/Exam**	**02 Hours**
Formative Assessment Marks	**40**	**Summative Assessment Marks**	**60**

Course Pre-requisite (s): PUC Science Knowledge

Course Outcomes (COs): After the completion of the course, the student will be able to

- Describe atomic properties using basic atomic models.
- Interpret atomic spectra of elements using vector atom model.
- Interpret molecular spectra of compounds using basics of molecular physics.
- Explain laser systems and their applications in various fields.

Semester – VI Physics

Program Name	BSc in Physics	**Semester**	**VI**
Course Title	**Elements of Condensed Matter & Nuclear Physics(Theory)**		
Course Code	**PHY C14 - T**	**No. of Credits**	**4**
Contact Hours	**60 Hours**	**Duration of SEA/Exam**	**2 Hours**
Formative Assessment Marks	**40**	**Summative Assessment Marks**	**60**

Course Pre-requisite(s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Explain the basic properties of nucleus and get the idea of its inner information.
- Understand the concepts of binding energy and binding energy per nucleon v/s mass number graph.
- Describe the processes of alpha, beta and gamma decays based on well-established theories.
- Explain the basic aspects of interaction of gamma radiation with matter by photoelectric effect, Compton scattering and pair production.
- Explain the different nuclear radiation detectors such as ionization chamber, Geiger-Mueller counter etc.
- Explain the basic concept of scintillation detectors, photo-multiplier tube and semiconductor detectors.

Semester – VI Physics

ProgramName	BSc in Physics	**Semester**	**VI**
Course Title	**Electronic Instrumentation & Sensors (Theory)**		
Course Code:	**PHY C16 - T**	**No. of Credits**	**04**
Contact Hours	**60 Hours**	**Duration of SEA/Exam**	**2 Hours**
Formative Assessment Marks	**40**	**Summative Assessment Marks**	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

- Identify different types of tests and measuring instruments used in practice and understand their basic working principles.
- Get hands on training in wiring a circuit, soldering, making a measurement using an electronic circuit used in instrumentation.
- 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.
- Understanding of the measurement of voltage, current, resistance value, identification of the terminals of a transistor and ICs.
- Identify and understand the different types of transducers and sensors used in robust and hand-held instruments.
- Understand and give a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.
- Connect the concepts learnt in the course to their practical use in daily life.
- Develop basic hands-on skills in the usage of oscilloscopes, multimeters, rectifiers, amplifiers, oscillators and high voltage probes, generators and digital meters.
- Servicing of simple faults of domestic appliances: Iron box, immersion heater, fan, hot plate, battery charger, emergency lamp and the like.

SEMESTER – I MATHEMATICS

MATDSCT 1.1: Algebra - I and Calculus – I	
Teaching Hours : 4 Hours/Week	**Credits: 4**
Total Teaching Hours: 56 Hours	**Max. Marks: 100 (S.A.-70 + I.A. – 30)**

Course Learning Outcomes: This course will enable the students to

- Learn to solve system of linear equations.
- Solve the system of homogeneous and non-homogeneous linear of *m* equations in *n* variables by using concept of rank of matrix.
- Students will be familiar with the techniques of integration and differentiation of function with real variables.
- Students learn to solve polynomial equations.
- Learn to apply Reduction formulae.

MATDSCP 1.1: Practical's on Algebra - I and Calculus – I	
Practical Hours : 4 Hours/Week	**Credits: 2**
Total Practical Hours: 56 Hours	**Max. Marks: 50 (S.A.-35 + I.A. – 15)**

Course Learning Outcomes: This course will enable the students to

- Learn *Free and Open Source Software (FOSS)* tools for computer programming
- Solve problem on algebra and calculus theory studied in **MATDSCT 1.1** by using FOSS software's.

Acquire knowledge of applications of algebra and calculus through FOSS

SEMESTER – II

MATDSCT 2.1: Algebra – II{Number Theory) & Calculus – II	
Teaching Hours : 4 Hours/Week	**Credits: 4**
Totat Teaching Hours: 56 Hours	**Max. Marks: 100 (S.A.-70 + I.A. – 30)**

Course Learning Outcomes: This course will enable the students to

- Learn the concept of Divisibility.
- Learn about prime and composite numbers.
- Learn the concept of congruences and its applications.

- Identify and apply the intermediate value theorems and L'Hospital rule.
- Understand the concept of differentiation and fundamental theorems in differentiation and various rules.
- Find the extreme values of functions of two variables.
- Students learn to find areas and volumes using integration.

PRACTICAL

MATDSCP 2.1: On Algebra – II (Number Theory) and Calculus – II	
Practical Hours : 4 Hours/Week	**Credits: 2**
Total Practical Hours: 56 Hours	**Max. Marks: 50 (S.A.-35 + I.A. – 15)**

Course Learning Outcomes: This course will enable the students to

- Learn *Free and Open Source Software (FOSS)* tools for computer programming
- Solve problem on algebra and calculus by using FOSS software's.
- Acquire knowledge of applications of algebra and calculus through FOSS

SEMESTER – III

MATDSCT 3.1: Algebra - III and Differential Equations – I	
Teaching Hours : 4 Hours/Week	**Credits: 4**
Total Teaching Hours: 56 Hours	**Max. Marks: 100 (S.A.-60 + I.A. – 40)**

Course Learning Outcomes: This course will enable the students to

- Enhance learning in Algebra and Differential Equations.
- Apply the concepts of algebra in practical problems.
- Solve various differential equations of practical interest.

PRACTICAL

MATDSCP 3.1: Practical's on Algebra - III and Differential Equations – I	
Practical Hours : 4 Hours/Week	**Credits: 2**
Total Practical Hours: 56 Hours	**Max. Marks: 50 (S.A.-25 + I.A. – 25)**

Course Learning Outcomes: This course will enable the students to

- Learn *Free and Open Source Software (FOSS)* tools for computer programming
- Solve problem on algebra and differential equations studied in **MATDSCT 3.1** by usingFOSS software's.

- Acquire knowledge of applications of algebra and differential equations through FOSS

SEMESTER – IV

MATDSCT 4.1: Real Analysis – I and Differential Equations – II	
Teaching Hours : 4 Hours/Week	**Credits: 4**
Totat Teaching Hours: 56 Hours	**Max. Marks: 100 (S.A.-60 + I.A. – 40)**

Course Learning Outcomes: This course will enable the students to

- Enhance learning in Analysis and Differential Equations.
- Apply the concepts of analysis in practical problems.
- Solve various differential equations of practical interest.

PRACTICAL

MATDSCP 4.1: On Number Theory and Calculus – II	
Practical Hours : 4 Hours/Week	**Credits: 2**
Total Practical Hours: 56 Hours	**Max. Marks: 50 (S.A.-25 + I.A. – 25)**

Course Learning Outcomes: This course will enable the students to

- Learn *Free and Open Source Software (FOSS)* tools for computer programming
- Solve problem on real analysis and differential equations by using FOSS software's.
- Acquire knowledge of applications of real analysis and differential equations through FOSS

Semester – I CHEMISTRY: 1

LEARNING OUTCOMES / COURSE OUTCOMES

Chemistry as Discipline Specific Course (DSC)

- The concepts of chemical analysis, accuracy, precision and statistical data treatment
- Prepare the solutions after calculating the required quantity of salts in preparing the

reagents/solutions and dilution of stock solution.

- Describe the dual nature of radiation and matter; dual behavior of matter and radiation, de Broglie's equations, Heisenberg uncertainty principle and their relatedproblems.
- Quantum mechanics. Derivation of Schrodinger's wave equation. Radial and angular Orbital shapes of s, p, d and f atomic orbitals, nodal planes. Electronic configurations of theatoms.
- Pauli's exclusion principle, Hund's rule , Aufbau's principle and its limitation.
- The concepts of Organic reactions and techniques of writing the movement of electrons, bond breaking, bond forming
- The Concept of aromaticity, resonance, hyper conjugation, etc.
- Explain bond properties, electron displacement effects (inductive effect, electrometric effect, resonance effect and Hyper conjugation effect). steric effect and their applications in explaining acidic strength of carboxylic acids, basicity ofamines.
- Understand basic concept of organic reaction mechanism, types of organicreactions.
- Understand the preparation and reactions ofalkanes.
- Understand the stability and conformational analysis ofcycloalkanes.
- Understand the concept of resonance , aromaticity andantiaromaticity.
- Describe relative strength of aliphatic and aromatic carboxylicacids.
- Explain the existence of different states of matter in terms of balance between intermolecular forces and thermal energy of the particles. Explain the laws governing behavior of idealgases and real gases. Understand cooling effect of gas on adiabaticexpansion
- Understand the conditions required for liquefaction of gases. Realize that there is continuity in gaseous and liquidstate.
- Understand the properties of liquids in terms of intermolecularattractions.
- Understand the existence of different states of matter in terms of balance betweenintermolecular forces and thermal energy of the particles. Explain the laws governing behavior of ideal gases and real gases. Understand cooling effect of gas on adiabaticexpansion
- Understand the conditions required for liquefaction of gases. Realize that there is continuityin gaseous and liquid state.
- Understand the properties of liquids in terms of inter molecularattractions.

Semester II **CHEMISTRY 2**

LEARNING OUTCOMES / COURSE OUTCOMES

Understand principles of titrimetric analysis.

- Understand principles of different type's titrations. Titration curves for all types of acids – base titrations.
- Gain knowledge about balancing redox equations, titration curves, theory of redox indicators and applications.
- Understand titration curves, indicators for precipitation titrations involving silvernitrate- Volhard's and Mohr's methods and theirdifferences.
- Indicators for EDTA titrations - theory of metal ion indicators. Determination ofhardness of water.
- Understand periodic table, classification and properties of s p d and f block elements
- Understand different scales for the measurement of electro-negativity and factors affecting it.
- Aromatic electrophilic substitution reactions like nitration sulphonation Friedel-Crafts reactions
- Understand the chemistry of the hydrides, carbides, oxides and halides of group 13 to 17
- Understand nucleophilic substitution at saturated carbon, energy profile diagram stereochemistry and factors affecting sn1 and Sn2 reaction
- Understand liquid crystals, classification with examples
- Understand the different forms of solids, laws of crystallography , miller indices and itscalculation, X-ray diffraction studies. Brags law and its equation
- Defects in solids , properties of glasses and concept of liquid crystals

DSC-3: Chemistry-III Practical

(L:T:P = 0:0:2) Contact Hours: 56 Credits: 2 Workload:4Hours/Week

Course Specific outcomes: At the end of the course student would be able to;

1. Understand the chemical reactions involved in the detection of cations and anions.
2. Explain basic principles involved in classification of ions into groups in semi-micro qualitative analysis of salt mixture
3. Carryout the separation of cations into groups and understand the concept of common ion effect.
4. Understand the choice of group reagents used in the analysis.
5. Analyze a simple inorganic salt mixture containing two anions and cations
6. Use instruments like conductivity meter to obtain various physicochemical

parameters.

7. Apply the theory about chemical kinetics and determine the velocity constants of various reactions.
8. Learn about the reaction mechanisms.
9. Interpret the behavior of interfaces, the phenomena of physisorption and chemisorption's and their applications in chemical and industrial processes.
10. Learn to fit experimental data with theoretical models and interpret the data

IV SEMESTER Chemistry

DSC-4: Chemistry-IV

(L:T:P = 4:0:0) Contact Hours: 56 Credits: 4 Workload:4Hours/Week

Course Specific Outcomes: After the completion of this course, the student would be able to;

1. Understand the importance of fundamental law and validation parameters in chemical analysis.
2. Know how different analytes in different matrices (water and real samples) can be determined by spectrophotometric, nephelometric and turbidimetric methods.
3. Explain the importance of Stereochemistry in predicting the structure and property of organic molecules.
4. Predict the configuration of an organic molecule and able to designate it.
5. Identify the chiral molecules and predict its actual configuration.
6. Write the M.O. energy diagrams for simple molecules.
7. Differentiate bonding in metals from their compounds.
8. Learn important laws of thermodynamics and their applications to various thermodynamic systems.
9. Understand adsorption processes and their mechanisms and the function and purpose of a catalyst.
10. Apply adsorption as a versatile method for waste water purification.

DSC-4: Chemistry-IV Practical

(L:T:P = 0:0:2) Contact Hours: 56 Credits: 2 Workload:4Hours/Week

Course Specific outcomes: After the completion of this course, the student be able to

1. Understand the importance of instrumental methods for quantitative applications.
2. Apply colorimetric methods for accurate determination of metal ions and anions in water or real samples.
3. Understand how functional group in a compound is responsible for its characteristic properties.

4. Learn the importance of qualitative tests in identifying functional groups.
5. Learn how to prepare a derivative for particular functional groups and how to purify it.

SEMESTER – V BOTANY

Course Title	**Plant Morphology and Taxonomy (Theory)**		
Course Code:	**DSC – BOT-C9 - T**	No. of Credits	**04**
Contact hours	**60 Hours**	Duration of SEA/ Exam	**2 hrs. and 30 min.**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:.CO1. Understanding the main features in Angiosperm evolution.

CO2. Ability to identify, classify and describe a plant in scientific terms, thereby, Identification of plants using dichotomous keys. Skill development in identification and classification of flowering plants.

CO3. Interpret the rules of ICN in Botanical nomenclature.

CO4. Classify Plants systematically and recognize the importance of Herbarium, Virtual Herbarium and Botanical gardens.

CO5. Recognition of locally available angiosperm families, plants and economically important plants.
Appreciation of human activities in conservation of useful plants.

SEMESTER – V BOTANY

Program Name	**B.Sc. in BOTANY**	Semester	**V**
Course Title	**Genetics and Plant Breeding (Theory)**		
Course Code:	**DSC – BOT-C11 - T**	No. of Credits	**04**
Contact hours	**60 Hours**	Duration of SEA/ Exam	**2 hrs.& 30 min.**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s)

Course Outcomes (COs): After the successful completion of the course, the student will be able to:.CO1. Understanding the basics of genetics, plant breeding and cell biology.
CO2. Ability to identify, calculate and describe crossing over and frequencies of recombinationCO3. Interpret the results of mating and pollinations.
CO4. Recognition of modes of inheritance of traits/ phenotypes and Phenotype-genotype correlation.

SEMESTER – VI BOTANY

Course Title	**PLANT PHYSIOLOGY AND PLANT BIOCHEMISTRY**		
Course Code:	**BOT C13-T**	No. of Credits	**04**
Contact hours	**04 Hours**	Duration of Exam	**2 hrs. & 30 min.**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisite(s):

Course Outcomes (COs): After the successful completion of the course, the student will be able to:CO5. Importance of water and the mechanism of transport. CO6. To understand biosynthesis and breakdown of biomolecules. CO7. Role of plant hormones in plant development and about secondary metabolites. CO8. Preliminary understanding of the basic functions and metabolism in a plant body. CO9. To understand the importance of nutrients in plant metabolism and crop yield.

SEMESTER – VI BOTANY

Course Title	**Plant Biotechnology (Theory)**		
Course Code	**BOT C-15 T**	No. of Credits	**04**
Contact hours	**60 Hours**	Duration of SEA/ Exam	**2 hrs. 30 min.**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Pre-requisites
Course Outcomes (COs): After the successful completion of the course, the student will be able to:. CO1. Explain the basics of the physiological and molecular processes that occur during plant growth anddevelopment and during environmental adaptations CO2. Understand how biotechnology has been used to develop knowledge of complex processes that occurin the plant CO3. Use basic biotechnological techniques to explore molecular biology of plants CO4. Understand the processes involved in the planning, conduct and execution of plant biotechnologyexperiments CO5. Explain how biotechnology is used for plant improvement and discuss the ethical implications of thatuse

SEMESTER – I COMPUTER SCIENCE

Course Code: DSC-1	**Course Title: Computer Fundamentals and Programming in C**
Course Credits: 04	Hour of Teaching/Week: 04
Total Contact Hours: 52	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 02

Course Outcomes (COs): After completing this course satisfactorily, a student will be able to:

- Confidently operate computers to carry out computational tasks

- Understand working of Hardware and Software and the importance of operating systems
- Understand programming languages, number systems, peripheral devices,networking, multimedia and internet concepts
- Read, understand and trace the execution of programs written in C language
- Write the C code for a given problem
- Perform input and output operations using programs in C
- Write programs that perform operations on arrays, strings , structures, unions and functions

SEMESTER – II COMPUTER SCIENCE

Course Code: DSC-2	**Course Title: Data Structures using C**
Course Credits: 04	Hour of Teaching/Week: 04
Total Contact Hours: 52	Formative Assessment Marks: 40
Exam Marks: 60	Exam Duration: 02 Hours

Course Outcomes (COs): After completing this course satisfactorily, a student will be able to:

- Describe how arrays, records, linked structures, stacks, queues, trees, andgraphs are represented in memory and used by algorithms
- Describe common applications for arrays, records, linked structures, stacks,queues, trees, and graphs
- Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
- Demonstrate different methods for traversing trees
- Compare alternative implementations of data structures with respect to performance
- Describe the concept of recursion, give examples of its use
- Discuss the computational efficiency of the principal algorithms for sorting and searching

SEMESTER – V COMPUTER SCIENCE

Program Name	**B.Sc.**	Semester	**V**
Course Title	**Programming in Python (Theory)**		
Course Code:	**DSC5**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Setup python to develop simple applications
CO2	Understand the basic concepts in Python Programming
CO3	Learn how to write, debug and execute Python programs
CO4	Understand and demonstrate the use of advanced data types such as tuples, dictionaries and lists, Tuples and Sets
CO5	Design solutions for problems using object-oriented concepts in Python
CO6	Use and apply the different Python Libraries for GUI Interface, Data Analysis and Data Visualization.
C07	Extend the knowledge of python programming to build successful career in software development.

SEMESTER – V COMPUTER SCIENCE

Program Name	**B.Sc.**	Semester	**V**
Course Title	**Computer Networks (Theory)**		
Course Code:	**DSC6**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Define various data communication components in networking.
CO2	Describe networking with reference to different types of models and topologies.
CO3	Understand the need for Network and various layers of OSI and TCP/IP reference model.
CO4	Explain various Data Communications media.
CO5	Describe the physical layer functions and components
CO6	Identify the different types of network topologies and Switching methods.
CO7	Describe various Data link Layer Protocols.
CO8	Identify the different types of network devices and their functions within a network.
CO9	Analyze and Interpret various Data Kink Layer and Transport Layer protocols.
CO10	Explain different application layer protocols.

SEMESTER – V COMPUTER SCIENCE

Program Name	**B.Sc./B.C.A**	Semester	**V**
Course Title	**Cyber Security(Theory)**		
Course Code:	**SEC-4**	No. of Credits	**02**
Contact hours	**30Hrs**	Duration of SEA/Exam	**01hrs**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

Course Outcomes(COs): After the successful completion of the course, the student will be able to:

CO1	After completion of this course, students would be able to understand the concept of Cyber security and issues and challenges associated with it.
CO2	Students, at the end of this course, should be able to understand the cybercrimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures.
CO3	On completion of this course, students should be able to appreciate various privacy and security concerns on online social media and understand the reporting procedure of inappropriate content, underlying legal aspects and best practices for the use of Social media platforms.

CO1	Understand basics of web technology
CO2	Recognize the different Client-side Technologies and tools like, HTML, CSS, JavaScript
CO3	Learn Java Servlets and JDBC
CO4	Web Technology for Mobiles and Understand web security

SEMESTER – VI COMPUTER SCIENCE

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Web Technologies (Theory)**		
Course Code:	**DSC8**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Understand basics of web technology
CO2	Recognize the different Client-side Technologies and tools like, HTML, CSS, JavaScript
CO3	Learn Java Servlets and JDBC
CO4	Web Technology for Mobiles and Understand web security

SEMESTER – VI COMPUTER SCIENCE

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**Statistical Computing & R Programming (Theory)**		
Course Code:	**DSC9**	No. of Credits	**04**
Contact hours	**52 Hours**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**40**	Summative Assessment Marks	**60**

Course Outcomes (COs): After the successful completion of the course, the student will be able to:

CO1	Explore fundamentals of statistical analysis in R environment.
CO2	Describe key terminologies, concepts and techniques employed in Statistical Analysis.
CO3	Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.
CO4	Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.
CO5	Understand, Analyse, and Interpret Correlation Probability and Regression to analyse the underlying relationships between different variables.

SEMESTER – VI COMPUTER SCIENCE

Program Name	**B.Sc.**	Semester	**VI**
Course Title	**R Programming Lab**		
Course Code:	**DSC9 Lab**	No. of Credits	**02**
Contact hours	**04 Hours per week**	Duration of SEA/Exam	**2 hours**
Formative Assessment Marks	**25**	Summative Assessment Marks	**25**

Overview

The following program problematic comprises of R programming basics and application of several Statistical Techniques using it. The module aims to provide exposure in terms of Statistical Analysis, Hypothesis Testing, Regression and Correlation using R programming language.

Learning Objectives

The objective of this Laboratory to make students exercise the fundamentals of statistical analysis in R environment. They would be able to analysis data for the purpose of exploration using Descriptive and Inferential Statistics. Students will understand Probability and Sampling Distributions and learn the creative application of Linear Regression in multivariate context for predictive purpose.

Course Outcomes:

- Install, Code and Use R Programming Language in R Studio IDE to perform basic tasks on Vectors, Matrices and Data frames. Explore fundamentals of statistical analysis in R environment.
- Describe key terminologies, concepts and techniques employed in Statistical Analysis.
- Define Calculate, Implement Probability and Probability Distributions to solve a wide variety of problems.
- Conduct and interpret a variety of Hypothesis Tests to aid Decision Making.
- Understand, Analyze, and Interpret Correlation Probability and Regression to analyse the underlying relationships between different variables.

1. Write a R program for different types of data structures in R.
2. Write a R program that include variables, constants, data types.
3. Write a R program that include different operators, control structures, default values for arguments, returning complex objects.
4. Write a R program for quick sort implementation, binary search tree.
5. Write a R program for calculating cumulative sums, and products minima maxima and

calculus.

6. Write a R program for finding stationary distribution of markanov chains.
7. Write a R program that include linear algebra operations on vectors and matrices.
8. Write a R program for any visual representation of an object with creating graphs using graphic functions: Plot (), Hist(),Linechart(),Pie(),Boxplot(),Scatterplots().
9. Write a R program for with any dataset containing data frame objects, indexing and subsetting data frames, and employ manipulating and analyzing data.
10. Write a program to create an any application of Linear Regression in multivariate context for predictive purpose.

DEPARTMENT OF ENGLISH

Department of English

Title of the Paper : " New Literatures in English "

Semester : VI sem

Programme : III B A, Optional English

No of hours : 6 hours

Programme outcome : This Elective paper introduces students to literature that has emerged from the postcolonial Australia, Canada, Africa, the Caribbean Islands and Singapore. The mix truly reflects the myriad situations in both individual and political spheres. The poems, the play and novel often speak about the trauma during the transition from one point of natural/cultural/political history to another. The students studying this paper develop skills to annotate unforgettable lines from the poems and write cogently about the thought-provoking Multi-layered problems that surface in the text.

Department of English..

Title of the Paper : Untouchable and Language Component.

Semester : III.

Programme : B.A/ B.Sc/ B.C.A.

Number of hours : 4hours.

Programme outcome :

- This paper for undergraduate offered in B.A, B.Sc, B.C.A. In this semester students learn an

unbridged Indian novel " Untouchable" written in English in taught in the class. The novel form contains a long narrative and reveals the working of a plot. The novel brings to the struggles and successes of people, their flaws and their resourcefulness. The novelist Mulk Raj Anand describe a day in the life of a sweeper. It is encloses working class people. Students are established their enhancing knowledge through this paper. The language component teaches words to describe people and their actions places and situations, trains students to find appropriate words and to write meaningful sentences and paragraphs. Through language component students enhance the level of understanding and the ability for expression.

- Thus, these are the programme outcome for undergraduate programme in B.A/ B.Sc/ B.C.A.

Title of the paper: Victorian fiction Programme: II B.A (optional English)

Semester: IV sem No of hours: 6 hours

Programme outcome:- The students move on to significant age and study a new form of literature; the Victorian age and the novel form. The three novels in this semester define the mores of the time. The first novel is " Silas Marner" by George Eliot. In the early 19th century, a person's village or town was all important providing the sole source of material and emotional support. "Hard Times" by Charles Dickens, suggests that England's over zealous adoption of industrialization threatens to turn human beings into machines. The next novel , " The Return of the Native" by Thomas Hardy, shows human actions being controlled by an impersonal force, perhaps called destiny and fate, which is independent of both humanity and it's gods. The novelists engage the question of morality,

Title of the Paper : Intellection - II

Semester : II

Programme : B.Com / B.B.A.

Number of hours : 3 hours + 1 hour Tutorial

Programme outcome :

This paper for undergraduate programs offered in Commerce and Business Administration. The students who are now familiar with the two important forms of literature - poetry and prose - explore more in these forms, which come with a slightly higher level of difficulty in this paper. The literary pieces here, in poetry

section, the poem "Ulysses" deals, the feeling about the need to go forward in life. The poem, "If" provide, a rule book to perfect the art of living and be human. The poem "Questions from a Worker Who Reads" reveals, boundless compassion for the working class. The poem "You Start Dying Slowly" reveals, us to be grateful for what we have and also to maintain loving relationships with family and friends. In prose section, "A Deed of Bravery", the story tells about the bravery of the unsung heroes ."Light is Like Water", this story which depicts the 'real' and the 'fantastic' like normal occurrence in a straight forward manner. "A Lesson My Father Taught Me", this story deals as a guiding principle in life. The five units of language component addresses the importance of achieving clarity in speaking and writing.

Thus, these are the programme outcomes for undergraduate programs in Commerce and Business Administration.

Title of the Paper : Intellection - I

Semester : I

Programme : B.Com / B.B.A.

Number of hours : 3 hours + 1 hour Tutorial

Programme outcome :

This paper f**o**r undergraduate programs offered in Commerce and Business Administration. The paper introduces some of the most delightful and instructive poems and prose pieces in English to the students beginning their undergraduate course. The literary pieces here, in poetry section, the poem "Polonius Advice to His Son", deals a Father's advice to a Son who is leaving for higher studies. The poem "Death, Be Not Proud, familiarise the world of Death which is dreaded by humanity as the end of life. The poem "Barter" gives us a sense that life is like a colourful market that offers many things. The poem "Partition", deals with the border conflict between India and Pakistan. The poem "Ajamil and the Tigers", clearly shows how the rulers sacrifices their people to maintain sovereignty. In prose section, the story "The Fir Tree" suggests that everything will eventually slide by; that "all stories must come to an end at last".The story "The Romance of a Busy Broker", reveals the busy financial world of stock market which compels a person to have complete involvement in work that subsequently makes him to have no time for the fulfillment of his personal needs.The story "Water - The Elixir of Life", brings out how water is indispensable to plant and human life. The five units of language component that follow every lesson strengthen the student's English vocabulary and understanding of English sentence structure.

Thus, these are the programme outcomes for undergraduate programs in Commerce and Business Administration.

Title of the paper: Business Correspondence, Refund and Language Component.

Semester: IV.

Programme: B.com/B. B. A.

Numbers of hours: 3 hours+1 hour tutorial

Programme outcome: Customized for the students of these streams, the Paper explains the nature of business Correspondence and teaches writing various kinds of business letters. The one act play conveys effectiveness of the dialogue. The play Refund is full of humour which deals with an extraordinary ludicrous situation.

The language component here emphasizes on the transactional aspect of English language, in its spoken as well as written form. The semester examination tests the student's business letter-writing ability, grasp of the play and language skills.

Title of the Paper : Julius Caesar and Language Component

Semester : IV

Programme : B.Sc/B.A/B.C.A.

Programme Outcome :

This paper for undergraduate offered in IV semester B.A/ B.Sc/B.C.A.In this final paper of their language English, the students are introduced to a full length play '' Julius Caesar'' by William Shakespeare. The play unlocks the complex emotions , breathtaking actions and intriguing situations. The students experience the effect of dailogue, the brilliance of imagery and the magnificene of poetry. Students enhance their knowledge through the learning of literary terms which Shakespeare used in this play. Dramatic monologue, soliloguy, chorus, etc..are the important literary devices would helps students to increase their literary knowledge.

The Language component here emphasizes on the transactional aspect of English language, in its spoken as well as written form, comprehension questions, annotations and essay type questions in the examinations test the level of understanding and the ability for expression.

DEPARTMENT OF PHYSICS

Programme Outcome	1. Develop, implement the plan of action to acquire new knowledge for specific scientific goals in pursuit of new intellectual interests 2. Students should be able to critically assess current state of knowledge and expertise.
Programme Specific Outcome	1. Students are expected to acquire core knowledge in physics with special focus on mechanics, quantum mechanics, electromagnetic theory, electronics, optics, special theory of relativity and Modern Physics 2. Learn how to design and conduct experiments demonstrating their understanding of the scientific methods and processes. 3. Realization of the impact of physics and science on society.
Course Outcomes	
Courses	**Outcomes**
Mechanics, Properties of Matter and Sound	1. To understand the motion of point mass, Conservation laws, gravitation, rotational motion 2. To understand the concepts Properties of matter and sound 3. Students should be able to solve complex and diverse problems in classical mechanics , properties of matter and sound.
Heat and Thermo Dynamics	1. To understand the basic principle of the Laws of Thermodynamics, Role of Thermodynamic Cycles. 2. Explain the concepts of entropy, enthalpy, reversibility and irreversibility 3. Apply the first and second laws of thermodynamics to various gas processes and cycles, Maxwell's thermodynamic relations
Optics	1. To understand the basic concepts of wave optics, physical optics and geometrical physics 2. Learn to conduct the experiments demonstrating the understanding of wave optics.
Atomic Physics and Spectroscopy	Study of Modern Physics in the fields of : interaction of matter, effect of electric field and magnetic field, to learn the behavior of atoms/molecules in various energy states.

Electronics	1.To acquire knowledge and apply it to various electronic instruments 2.To motivate the students to apply the principles of electronics in their day-to-day life. 3.To learn the logic gates and to understand the action and application of counters
Electricity and Electromagnetism	1. To know the concepts of Electricity ,Gauss law, Faraday's Law, Inductance, Alternating Current Circuits, Direct Current Circuits, Network Theorem 2. To understand Electromagnetic theory and problem solving skills
Quantum Mechanics and Relativity	1. Develop the concepts of modern physics: basic knowledge of special theory of relativity and general theory of relativity, elementary quantum mechanics, nuclear physics, and particle physics 2. Understand the relationship between observation and theory and their use in building the basic concepts of modern physics. 3. Understand how major concepts developed and changed over time. 4. Capable of analyzing and solving problems using oral and written reasoning skills based on the concepts of modern physics.
Solid state physics	1. Understand basic concepts and mathematical methods of solid state physics. 2. Obtaining the variables derived by problem solving method.

DEPARTMENT OF CHEMISTRY

Title of the paper : **Chemistry - I**

Bsc/semester : I Bsc (I sem)

No of hours :

Theory	practical
04	04

Course outcome:

The objective of this course is to learn about inorganic chemistry, physical chemistry,general chemistry & practical chemistry.

The students are able to get knowledge about structure of atoms, electronic configuration of elements.

classification of elements in periodic table & periodic properties .Basic concepts in organic chemistry, types of organic reactions. preparation ,properties & uses of Alkanes, Alkenes, alkynes & Dienes.Types of indicators ,liquid mixture, Fractional distillation, distribution law, Purification of compounds ,stoichiometry , importance of organic compounds in food, fuels, textiles, dyes,drugs etc. preparation of standard solution, standardisation of solution &estimation. (Acid-Base titration, redox titration)

Title of the paper: **Chemistry – II**

Bsc/semester : I Bsc (II sem)

No of hours :

Theory	practical
04	04

Course outcome:

The objective of this course is to learn about inorganic chemistry, physical chemistry, general chemistry & practical chemistry.

The students are able to get knowledge about, ionic bonding, covalent bonding, and molecular Orbital approach. Cycloalkanes , nomenclature of benzene derivatives. Aromatic electrophilic substituation ,hydrogenation of aromatic compounds. chemical kinetics, ionic equilibrium. Prepartion and synthetic application of organic reagents , polymers , organic reagents in inorganic analysis , manufacture of soap and detergents. Qualitative analysis of organic compounds. Preparation of certain organic compounds.

Title of the paper : **Chemistry - III**

Bsc/semester : II Bsc (III sem)

No of hours :

Theory	practical
04	04

Course outcome:

The objective of this course is to learn about inorganic chemistry, physical chemistry, general chemistry & practical chemistry.

The students are able to get knowledge about, chemistry of transition elements& inner transition elements their electronic configuration, magnetic properties, spectral properties, oxidation states organometallic compounds.-preperation & properties. Alcohols ,phenols, ethers, carbonyl compounds-classification ,synthesis second Law of thermodynamics, free energy ,crystallography,liquidcrystalsLaws,definitions,classifications,applications.

Chromatography-TLC, Column Chromatography , Gas Chromatography, HPLC-experimental details ,instrumentation& applications .Energy sources-Working of cells.Nanotechnology-properties ,types& applications. Amino acids synthesis classification , properties. (Qualitative analysis ,Inorganic preperations.)

Title of the paper : **Chemistry - IV**

Bsc/semester : II Bsc (IV sem)

No of hours :

Theory	practical
04	04

Course outcome:

The objective of this course is to learn about inorganic chemistry, physical chemistry, general chemistry & practical chemistry.

The students are able to get knowledge about, Co-Ordination compounds, VBT CFT , Ligand field theory Isomerism in co-ordination complexes-classification, Nomenclature ,Stability of complexes. Stereochemistry-definitions & synthesis. geometrical isomerism- cis & trans designation ,mechanism. Carbohydrates- structural elucidation ,reactions. Elements of quantum mechanics . electrochemistry, transport number applications of conductance measurement definitions,Laws,conductometrititrations.HSAB,garvimetry,Dyes,physical properties & chemical constitution, surface tension ,parachor.

(Physical experiments-Determination of density ,viscosity ,surface tension,

Rate constant transition temperature, percentage composition thermometric titration.

Title of the paper : **Chemistry (SEC)**

Bsc/semester : III BSc (V sem)

No of hours :

Theory
02

Course outcome:

The objective of this course is to learn analytical chemistry. Skill Enhancement Course is a course for V semester which may be chosen from a pool of the courses.

The students are able to get knowledge about interdisciplinary nature of analytical chemistry, sampling,

accuracy, precision, errors and significant figures. Composition of soil, analysis of ph soil. Analysis of ph, alkalinity, acidity and DO of water, water sampling methods and water purification methods, nutritional value of foods, food processing, food preservation and adulteration, paper chromatography, TLC, column and ion exchange chromatography.

Title of the paper : **Chemistry (SEC)**

Bsc/semester : III BSc (VI sem)

No of hours :

Theory
02

Course outcome:

The objective of this course is to learn polymer chemistry. Skill Enhancement Course is a course for V semester which may be chosen from a pool of the courses.

The students are able to get knowledge about preparation, structure, properties and application of polymers. Mechanism and kinetics of polymerization, polymerization techniques, crystallization and crystallinity of polymers, crystalline melting point and degree of crystallinity, polymer solution, solubility parameters, thermodynamics of polymer solutions, lower and upper critical solution temperature.

DEPARTMENT OF MATHEMATICS

- To find the nth derivatives of functions
- Apply the Leibnitz's theorem for finding nth derivative of product of two functions.
- Apply the chain rule for functions of several variables.
- Apply Taylor's and Maclaurin's series for finding series expansions of functions and approximating values.
- Understand the concept of indeterminate forms, their occurrence in problems and theirevaluation
- Describe the concepts and applications of derivatives and higher order derivatives
- Understand the ideas of derivatives and higher order derivatives
- Develop skill in finding the partial derivatives of functions of several variables and various rules associated.

INTEGRAL CALCULUS:

- Definite Integrals, properties and Reduction formula.
- Acquire the basic ideas of double and triple integral.
- Apply the techniques of double and triple integral to various problems of finding length of plane curves, surface areas and volumes of surfaces of revolution

- Change variables in multiple integrals.
- Improper Integrals- Gamma and beta functions and results, connection between Beta andGamma function, Applications of evaluation of integrals, Duplication formula.

DIFFERENTIAL EQUATIONS.

- Different methods to solve first order, first degree linear differential equations.
- Determine solutions to second and higher order linear differential equations(homogeneous and non homogeneous) with constant coefficients.
- Acquire the idea for solving the first and higher order partial differential equations.

ALGEBRA.

- To understand the concept of theory of equations and methods to solve equations ofdifferent degree-Cardon's method, Descarte's method.
- Learn more about matrices and matrix methods to solve system of equations by verifying consistency of equations.
- Acquire the basic knowledge of Number Theory and standard theorems.

GROUP THEORY-

- Acquire the basic knowledge and the structure of Group, Subgroup and Cyclic Groups.
- Explain the significance of the notion of a normal subgroup, and of a simple group.
- Analyze and demonstrate examples and theorems on subgroups, normal subgroups andquotient groups.
- Use Lagrange's Theorem to analyze the cyclic subgroups of a group.
- Acquire the notion of permutations and operations on them.
- Prove Cayley's theorem and understand its applications.
- Develop an idea about Isomorphism, homomorphism and automorphism.

RINGS AND FIELDS-

- Describe the characteristics of a ring ,subring, integral domain, field, quotientring, ideals, units and associates. b) polynomial ring and Homomorphism.
- **vector spaces-** Definition and examples. Theorems on linear combination, linear span, linear dependence, independence, Basis and Dimension of vectors. Homomorphism andIsomorphism of vector space and direct sums.
- **linear transformations-** Definitions, linear maps as matrices, rank and nullity theorem, Eigen values and Eigen vectors of a linear transformation.

REAL ANALYSIS:

- Real Sequences- Definition, bounded , unbounded , Infimum , supremum and limit of sequences. Standard theorems on limits. Convergent, divergent and oscillatory sequences,monotonic sequence, Cauchy's general principle of convergence,
- Infinite Series- Definition, Convergence, divergence and oscillation of series. Geometric series, p series, Tests of convergence of series, Alternating series.

COMPLEX ANALYSIS:

- Function of a complex variable- Equation of a circle and straight line in complex form, limit, continuity and differentiability, Analytic functions, Cauchy- Riemann Equations in Cartesian and polar forms, Harmonic functions, theorems on Analytic functions, Constructions of Analytic Functions- Milne Thomson method and using the concept of Harmonic functions.
- Complex Integration- The complex line integral, Cauchy's Integral theorem, Integral Formulae for the function and the derivatives. Applications to the Evaluations of simple line Integrals, Cauchy's Inequality, Liouville's theorem, Fundamental theorem of algebra.

APPLIED MATHEMATICS:

- Laplace Transforms- Definition and basic properties, Laplace Transforms of standard functions, Derivative of functions, Integral of functions, α- functions. Inverse Laplace

Transforms-properties and theorems, convolution theorem, solution of differential Equations with constant coefficients by laplace transforms.

- **Fourier Series-** periodic functions, even and odd function, Euler formula, fourier series and half range series.

NUMERICAL ANALYSIS-

- Numerical solution of Algebraic and transcendential Equations.
- Numerical solutions of first order linear differential Equations.
- Finite differences.
- Numerical integration.

RIEMANN INTEGRATION:

- Upper and lower sums, criterion for Integrability, Integrability of continous and monotonic functions, Fundamental theorem of calculus, Change of variables, Integration by parts, first and second Mean value theorems of Integral calculus.

VECTOR CALCULUS-

- Vector field and Scalar field. Gradient of a Scalar field, Divergence and curl of a Vector field, standard Derivations, Vector Integration using Green's theorem.

DEPARTMENT OF ZOOLOGY

Department of Zoology

Title of the paper : Animal diversity-II

B.Sc / Semester : I B.Sc (II sem)

No of hours : theory -04 hrs; practical – 04Hrs

Course outcome:

The objective of this course outcome is to learn about features of Chordata and its representatives.

The students are able to get knowledge about general characters of Chordata and its classification. Classification of chordata includes 4 sub phylum and its examples.sub phylum vertebrata includes 5 classes

and its classification with example. Important characters of mammalin orders and dental formula of each order and comparative anatomy of vertebrates (heart, brain, kidney, aortic arch).

Title of the paper : Animal physiology and Developmental biology

B.Sc / Semester : II B.Sc (III sem)

No of hours : theory -04 hrs; practical – 04Hrs

Course outcome:

The objective of this course outcome is to learn about Physiology and developmental biology.

The students are able to get knowledge about physiology of animals with suitable examples such as Homeostasis, thermoregulation and osmoregulation. Importance and physiological process of digestion, respiration, circulation, excretion and neuro and muscle physiology. Process of gamete formation and development of frog, chick and human.

Title of the paper : Biochemistry and Applied Zoology

B.Sc / Semester : III B.Sc (V sem)

No of hours : theory -04 hrs; practical – 04Hrs

Course outcome:

The objective of this course outcome is to learn about structure of Macromolecules and application of zoology in various fields.

The students are able to get knowledge about structure, classification and importance of carbohydrates, proteins, lipids, enzymes and nucleic acids. Purpose of sericulture, vermiculture and fisheries. Life cycle of pest and vectors and their diseases to humans , preventive measures. Conservation of wild life and hotspots of biodiversity. Biostatistics with suitable examples.

Title of the paper : Apiculture (SEC)

B.Sc / Semester : III B.Sc (V sem)

No of hours : theory -02 hrs

Course outcome:

The objective of this course outcome is to learn about bee keeping & its by products, Entrepreneurship.

The students are able to get knowledge about history of bee keeping, classification and biology of honey bees. Social organization and foraging plants of honey bees. Rearing of bees and their diseases and enemies. Product of apiculture industry and its uses. Bee keeping industry with recent , modern methods, cross pollination in bee hives.

DEPARTMENT OF BOTANY

COURSE LEARNING OUTCOMES OF THE BOTANY SUBJECTS OF EACH SEMESTER OF CBCS SYLLABUS

I SEMSTER

DSCB 1.1- DIVERSITY OF MICROBES, ALGAE, FUNGI, PLANT PATHOLOGY AND BRYOPHYTES

- The fundamental concepts related to microbes, Algae, Fungi, lichens and Bryophytes and concept of microbial nutrition.
- Discovery and general structure and classification of viruses based on their characteristics and structures.
- Identify true fungi and develop critical understanding of the common plant diseases according to the geographical locations and their remediation.
- Demonstrate the principles and application of plant pathology in the control of plant disease.
- Increase the awareness and appreciation of human friendly viruses, bacteria, algae, fungi and bryophytes and their economic importance.
- Demonstrate skills in laboratory, field and work related to mycology and plant pathology.
- Metagenomics is proving to be a powerful tool, considerably enhancing the present understanding of the extent and role of microbial diversity in their natural habitats, and in many ecologically important environments, with far greater implications on human health and disease
- The overall aims with the course are to provide a deeper knowledge of the genetic and functional diversity of microorganisms in different ecosystems, and a basic understanding of the methods that are used in the area.
- Analysing microorganisms up close, microbiologists play a crucial role in combating disease, creating chemical products for agriculture, and even helping to keep the planet healthy

II SEMESTER

DSCB 1.2- PTERIDOPHYTA, GYMNOSPERMS, PLANT MORPHOLOGY AND PLANT TAXONOMY

On completion of this course, the students will be able to learn,

- Gain adequate knowledge about the occurrence, distribution, structure and life history of pteridophytes and gymnosperms
- Pteridophytes and Gymnosperms Understanding of plant evolution and their transition to land habitat
- Develop critical understanding anatomy Pteridophytes and Gymnosperms
- Study and impart knowledge of Understanding of plant evolution and their transition to land habitat and seed habit
- Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Pteridophytes, and Gymnosperms
- Understand the habit of the angiosperm plant body and gain the knowledge of the vegetative characteristics and reproductive characteristics of the angiosperm plant.
- Understand the various adaptations of organs in the angiosperm plants.
- Understand the comparative account among the families of angiosperms.
- Understand the distinguishing features of angiosperm families.
- Know the role of cytology and Phytochemistry in Taxonomy.
- Study of Plant families with respect to Systematic position, Morphological characters, floral formula and floral diagram.
- Preparation of artificial key

III SEMESTER

DSCB 1.3- PLANT ECOLOGY, PLANT ANATOMY AND PLANT PHYSIOLOGY

- Develop an understanding of concepts and fundamentals of plant anatomy and examine the internal anatomy of plant systems and organs
- Develop critical understanding on the evolution of concept of organization of shoot and root apex.
- Analyze the composition of different parts of plants and their relationships and to evaluate the adaptive and protective systems of plants
- Understand core concepts of biotic and abiotic and India evaluate energy sources of ecological system
- Understand plant communities and ecological adaptations in plants
- Analysis the phytogeographical division of India and vegetation types of Karnataka

- Knowledge about the various physiological process in higher plants such as photosynthesis with particular emphasis on light and dark reactions, C3 and C4 pathways, respiration on aerobic and anaerobic respiration, movement of sap and absorption of water in plant body and plant movements.
- Know the nitrogen metabolism and its importance.
- Conduct experiments using skills appropriate to subdivisions

IV SEMESTER

DSCB 1.4- CELL AND MOLECULAR BIOLOGY, GENETICS, REPRODUCTIVE BIOLOGY AND PLANT BREEDING.

- Understand the "Science of Heredity". Realize the role of genes in evolution of species.
- Conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage.
- Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders.
- Develop critical understanding of chemical basis of genes and their interactions at population and evolutionary levels.
- Know the molecular biology in relation to genetic material, its inheritance, modification, replication and repair
- Examine the structure, function and replication of DNA
- Understand the science of plant breeding.
- To study the techniques of production of new superior crop verities

V SEMESTER

DSEB 1.1-TAXONOMY OF FLOWERING PLANTS

- Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium
- Evaluate the Important herbaria and botanical gardens
- Interpret the rules of ICN in botanical nomenclature
- Assess terms and concepts related to Phylogenetic Systematics.
- Generalize the characters of the families according to Bentham & Hooker's system of classification
- Understand the comparative account among the families of angiosperms.
- Understand various angiosperm families emphasizing their morphology, distinctive features and biology.
- Understand various rules, principles and recommendations of plant nomenclature
- Know modern trends in taxonomy.

- Understand major evolutionary trends in various parts of angiosperm plants.

V SEMESTER

SECB 1.1-MEDICINAL PLANTS AND ORNAMENTAL PLANTS

- Conceptualize ethno botany as an interdisciplinary science
- Restate the established methodology of ethno botany studies
- Categories various indigenous ethnic groups and their environmental practices.
- Understand the legalities associated with ethno botany.
- Recognize the basic medicinal plants available
- Apply techniques of conservation and propagation of medicinal plants.
- Setup process of harvesting, drying and storage of medicinal herbs
- Propose new strategies to enhance growth of medicinal herbs considering the practical issues pertinent to India

VI SEMESTER

DSEB 1.4-ECONOMIC BOTANY AND MEDICINAL PLANTS

- Understand core concepts of Economic Botany and relate with environment, populations, communities, and ecosystems.
- Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership
- Develop a basic knowledge of taxonomic diversity and important families of useful plants
- Understand the utilization of plant and wealth domestication, evaluation, bio prospection.
- Understand ecological distribution, diversity, origin, distribution and cultivation of various crop plants and cash plants.
- Increase the awareness and appreciation of plants & plant products encountered in everyday life
- Appreciate the diversity of plants and the plant products in human use.
- To acquire the knowledge of Processing, therapeutic uses of various medicinal plants.

VI SEMESTER

SECB 1.4-FLORICULTURE

- Develop conceptual understanding of gardening from historical perspective
- Analyze various nursery management practices with routine garden operations.
- Distinguish among the various Ornamental Plants and their cultivation

- Evaluate garden designs of different countries
- Appraise the landscaping of public and commercial places for floriculture.
- Diagnoses the various diseases and uses of pests for ornamental plants
- Understand the concept of Plant Propagation/multiplication techniques, growth, practical problems and plant care.
- Classify the cultivars according to scientific names.
- Plan the development of orchards and its management
- Analyse the process of Vegetative propagation
- Appreciate the diversity of plants and selection of gardening
- Examine the cultivation of different vegetables and growth of plants in nursery and gardening

DEPARTMENT OF HISTORY

HISTORY OF INDIA UPTO 1206AD

- this paper is designed to help the students to understand political history of Ancient India
- Cultural development of Ancient period.
- To analyze the administration of great rulers.

HISTORY OF INDIA 1206 TO 1761AD

- To understand the political history of Medieval India.
- To analyze the administrative pattern of the Medieval rulers
- To compare the society and economy of Medieval period with Present day.

HISTORY OF MODERN INDIA 1757 TO 1858 AD

- The political changes of the period and expansion of British Empire in India.
- Structure of the colonial government, economic policies and its impact, administrative changes.
- Social reforms and rebellion.

INDIAN NATIONAL MOVEMENT (1885 TO 1947AD)

- Rise and growth of national consciousness.

- The contributions of freedom fighters and their techniques.
- Achievement of freedom, growth of communalism and partition of country.

PRINCIPLES OF TOURISM

- The role of Literary and epigraphical sources for the understanding of south Indian History.
- The significant ontributions of Satavahanas, Chalukyas, Pallavas, Hoysala, Rastrakuta rulers and their administratve reforms.
- The nature of state society and economy and contributions of socio-religious reformers.

STATE AND SOCIETY IN SOUTH INDIA(1336 TO 1800 AD)

- Role of sources for understanding state and society of south India.
- Significant contributions of rulers of vijaynagara and Bahamani Dynasties.
- Nature of society, state, administration and economy.
- Religious and cultural developments.

COLONIALISM AND NATIONALISM IN ASIA(1800 TO 1950AD)

- Development that took place in China.
- Rise of Modern Japan and Japan between two world wars.
- Developments in Turkey and Iran.
- The nature of Arab nationalism and creation of Israel.

TOURISM DEVELOPMENT AND ORGANIZATION

- Developments that took place in Mysore state after restoration.
- Significant contributions of wodeyar rulers and prominent Dewans.
- Administrative reforms of commissioners.

- Political Socio-Cultural Movements in Modern Mysore(Karnataka)State

HISTORY OF MODERN EUROPE(1789 TO 1945AD)

- Nature, scope, course and results of French revolution and post revolution developments.
- Nationalism and Socialism in Europe.
- Unification movements in Italy and Germany and role of Bismarck
- Causes and effects of World wars, Russian Revolutions and functions of UNO

INDIA AND CONTEMPORARY WORLD(1950 TO 1995 AD)

- Establishment of Indian republic, problems and developments of free India.
- India's relation with International organizations and contemporary world.
- Modern developments in Asia and struggle against apartheid and Nationalist struggle inAfrice and Latin America.

DEPARTMENT OF ECONOMICS

Paper – 1

Indian Economy

1st Semester B.A

The major purpose of the course is to enable the student to have an analytical Understanding of various issues of the Indian economy. It enables the student to understand the Structure and development of the economy. Agricultural sector in India and agricultural prices in India, industrial sector in India. Trade balance of payment and trade policy. Financial system in India. Growth of service sector in India and critically analyse the approaches, forces and issues Of the Indian Economy and critically appraise current economic problems in India.

Paper – 2

Micro Economics

2nd semester – B.A

The course analyses the economic behaviour of individuals, firms and markets. It is mainly concerned with the objective of equipping the students in a rigorous and comprehensive manner with the various aspects of consumer behaviour and demand analysis, production theory and behaviour of costs, theory of rent and interest. The theory of traditional markets like perfect competition market, Monopoly market, oligopoly market, imperfect or monopolistic market. Duopoly market, and equilibrium of firm in modern profit and non-profit maximizing framework.

Paper – 3

Macro Economics

III – Semester B.A

Macroeconomics or aggregate economics analyses and establishes the functional Relationship between the large aggregates. The aggregate analysis has assumed such a great Significance in recent times that a prior understanding of macroeconomic theoretical structure is Considered essential for the proper comprehension of the different issues and policies. Macroeconomics is not only a scientific method of analysis but also a body of empirical economic Knowledge. The Course equips the students to understand systematic facts and latest theoretical Developments for empirical analysis.

Paper – 4

Mathematics and statistics for Economics

4th Semester B.A.

Economics is incomplete without knowledge of Mathematics and statistics. Since mathematics Gives flesh and blood to the subject of Economics. Mathematics for Economics deals with various Applications of mathematical tools and techniques in defining and developing economic Relationships. So this course, accordingly, is designed to include various mathematical methods to Analyse and understand economic theories.

Economics has become more and more analytic over the years, requiring sufficient Knowledge of quantitative methods. To meet this requirement, a course in Statistics for Economics Is absolutely essential. This course will help the student in data collection, presentation, analyses And drawing inferences about various statistical hypotheses. Further, it helps to develop the Analytical skills in the student.

Paper – Money, Banking and Public Finance

5th semester B.A

Money plays an important role in macroeconomic situation. A clear understanding of the operations of money interactions between monetary aggregate and real aggregates. Monetary policy interventions and their interactions with the rest of the economy is essential to to release how monetary forces operate through a magnitude of channels. The course deals with the evaluation of money, development of commercial banks, Central Bank, theory relating to to banking and banking practices in major development countries.

Public Finance aims at giving the students an analytical Understanding of the growth, pattern and terms in public expenditure, and revenue, and the role of The government in the budgetary process.

Paper – History of Economic Thought

5th Semester B.A

The major purpose of the course in to enable student to have an analytical understanding of various issues of the history of economic thought. It enables the student to understanding the nature and origin of economic thought and critical analysis the approaches forces and ideas of the economic thought and critically appraise current economic ideas are thoughts in the world. It enables the student to review the various thoughts and ideas for growth of economic thought.

Paper - Indian economic development

5th semester B.A - Generic elective paper

The major purpose of the course is to enable the student to have an analytical Understanding of various issues of the Indian economy. It enables the student to understand the Structure and development of the economy. Agricultural sector in India and agricultural prices in India, industrial sector in India. Trade balance

of payment and trade policy. Financial system in India. Growth of service sector in India and critically analyse the approaches, forces and issues Of the Indian Economy and critically appraise current economic problems in India.

Paper - Economics of development and planning

6th semester. B. A.

Economic development is a universal importance and its study is gaining lot of prominence in present pay world. Economic development is the interest of both rich and poor countries. For development Nations the study is crucial for overcoming the problem of secular stagnation whereas for the developing countries the study is essential to break the vicious circle of poverty. While a few success stories can be counted. Mini have grappled with the choice, problems like over tea and in security, unemployment, Poor health, environmental pollution excreta.

The objective of this course is to to give an exposure to the student recording the the origin of planning and policies by discussing the various aspects of development under the five year plans.

Paper – Indian Economic Thought

6th semester – B.A

The Indian economic thought course is to enable the student to have an analytical understanding of different thoughts Indian economic thinkers. It enables the student to understand the structure and growth of Indian economic thoughts and critically analyse the approaches, ideas of Indian economic thought and critically appraise ancient and current economic ideas in India. It enables the student to review the various stages for growth of Indian thoughts and comparison with western countries of the world.

Paper – Karnataka Economic Development

6th semester B.A. – Generic Elective

Karnataka Economic Development paper provides an analysis of trends and patterns of economic development and social change in Karnataka during the planning era. The population growth and its features, sectoral growth trends and issues are dealt with. The students will learn the different aspects of

State Economy viz., agriculture development, industrial development, and state finances and regional Imbalances. The human development and regional development implications are derived from the Overall study of the growth process of Karnataka State. A thorough knowledge of the performance Of Karnataka Economy helps students to face State level competitive examinations.

DEPARTMENT OF POLITICAL SCIENCE

COURSE OUTCOME

INTRODUCTION TO POLITICAL SCIENCE:

- Students will understand the basics of the subject , learn evolution of political science

INDIAN GOVERNMENT AND POLITICS

- Opportunity to know about constitution, Government organs, fundamental rights andduties

MAJOR POLITICAL IDEALOGIES

- Students can understand ideologies of Sociolism, Nationalism and Democracy

INTRODUCTION TO INTERNATIONAL RELATIONS:

- Opportunity to study other nation's politics and government.
- Students will be able to Know Changing role of Modern state.

POLITICAL THOUGHT, POLITIAL SOCIOLOGY, PUBLIC ADMINISTRATION:

- Studetns can study about political thinkers, Society and state concept to betterunderstand the role of administration

INDIAN GOVERNMENT AND POLITICS, PUBLIC POLICY, INTERNATIONAL

RELATIONS

- Great opportunity to understand Indian Government, Constitution, Decision Making.
- Student will be able to understand diplomacy, war and international relations.

DEPARTMENT OF COMMERCE AND MANAGEMENT

ENTREPRENEURSHIP DEVELOPMENT

- Familiarize the students with the latest programs of the government authorities in promoting small and medium industries.
- Impart knowledge regarding how to start new ventures.
- Equip the students to have a practical insight for becoming an entrepreneur.

FINANCIAL MANAGEMENT

- Familiarise the students with the conceptual framework of financial management.
- Enable the students to understand the practical application of financial management. Provide conceptual and analytical insights to make financial decisions skilfully.
- Provide the students with a clear-cut idea about the functioning of Indian Capital Market.
- Provide an in-depth knowledge on Capital Market

MANAGEMENT OF BANKING AND INSURANCE SERVICES.

- Provide basic knowledge of the theory and practices of banking.
- Familiarize the students with the changing scenario of Indian Banking.
- Expose the students to the changing scenario of Indian banking.

CORPORATE ACCOUNTING

- Enable the students to develop awareness about corporate accounting inconformity with the provisions of Companies Act, IAS and IFRS.
- Enable the students to prepare and interpret financial statements of joint stock companies in different situations.
- Expose the students to the accounting practices prevailing in the corporate.
- Exposure to the issue of shares and debentures of the company
- Attainment of knowledge about accounting procedure of company final account. Understanding the accounting procedure amalgamation and absorption of company
- Ability to get the knowledge about valuation of shares.

- Understanding the accounts procedure of liquidation of Ltd. Company.

BUSINESS STATISTICS

- Enable the students to gain understanding of statistical techniques as are applicable to business.
- Enable the students to apply statistical techniques for quantification of data in business.
- Develop for applying appropriate statistical tools and techniques indifferent business situations.
- Making familiar with statistical tools which are relatively used in business.
- Imparting the ability to collect present, analyze and interpret data.

BUSINESS TAXATION

- Familiarize the students about the fundamental concepts of Income Tax
- Enable the students to acquire the skills required to compute Gross Total Income with more emphasis on income from salary and income from house property.
- Impart the basic knowledge and understanding of the concepts and practices of Income Tax Law in India.
- Understanding basic concepts in Indian Tax Act.
- Obtaining the knowledge about tax free incomes.
- Acquiring the knowledge about general deductions from income.
- Exposure to income tax planning
- Knowing the procedure of calculation of income tax
- Understanding the procedure of e-filling of return and e-payment of tax.
- Getting known with application of principles and provisions of direct tax laws in computation of taxable income under various heads of income.

AUDITING

- Understand the principles, techniques and practice of auditing
- Familiarise the students with the principles and procedure of auditing.
- Enable the students to understand the duties and responsibilities of auditors.
- Getting knowledge of vouching of cash and credit transactions.
- Knowing the appointment procedure of Auditor.
- Acquiring the skills of Audit program of co-operative societies and banks.
- Knowledge about writing of audit reports.

COST ACCOUNTING AND MANAGEMENT ACCOUNTING

- Familiarize the students with cost concepts.
- To make the students learn cost accounting as a separate system of accounting
- Impart knowledge of cost accounting system and acquaint the students with the measures of cost control.
- Develop professional competence and skill in applying accounting information for decision making.
- Equip the students to interpret financial statements with specific tools of management accounting.
- Enable the students to have a thorough knowledge on the management accounting techniques in business decision making.

PRINCIPLES OF MARKETING

- Enhancing the skill of marketing among students.
- Providing the different techniques of marketing for increase of Sales.
- Creating the sense how to behave in the market while buying or selling of product.
- Understanding how to Undertake crucial task such as competition analysis, production etc.
- Providing information about buying pattern and different attitudes of consumers.
- Providing information about buying pattern and different attitudes of consumers.

COST ACCOUNTING

- Creating logical thinking power.
- Creating ability to take decision at different level of production activity like make or buy, project launching etc.
- Developing knowledge among students about cost ascertainment and fixation of selling price and cost control.
- Knowledge about presentation of cost accounting information for the purpose of decision making.
- Determination of profitable or unprofitable activity in business by using different cost accounting tools.
- Developing knowledge about preparation of tenders, quotations, etc.
- Helping in determining the product total cost and fixation of selling price.
- Creating skills about handling of various financial records, documentation, collection and classification of different costs.
- Enhancing the knowledge of business project analysis and cost planning and procedure.
- Getting known with how to publish information about production to management, consumer, Government, Employee at different levels for decision making purpose.

BUSINESS MANAGEMENT

- Supporting to Achieve Group Goals.
- Knowledge about motivating employees by providing financial and nonfinancial incentives.
- Evaluating the economic growth and development of an organization.
- Understanding the relation between individuals, groups, departments and between levels of management.
- Comprehending the human resource productivity.

E-C OMMERCE

- Knowledge of technologies supporting E-commerce, including web services and electronic payment system.
- Recognition of fundamental principles of E-business and Knowledge about Electronic Data Interchange.
- Analysis of and real business cases regarding their E-Business strategies and transformation processes and choices.

MARKETING MANAGEMENT

- Marketing management helps the students to analysis product design, promotion, selling and distribution
- The students will focus more on the concepts and field work such as promotion, advertisement, research and sells.
- Marketing is the subject which gives us the detail information about customer, sellers manufactures etc.

BUSINESS LAW

- It helps to understand resolve the legal formalities require business.
- It helps to resolve the legal issues occur in business.
- It helps to do business legally and not getting study by practicing and unethical things.

BACHOLORE OF BUSINESS ADMINISTRATION (BBA)

COURSE OUTCOME

FINANCIAL ACCOUNTING

- To enable the students to understand the concepts and conventions of accounting and also accounting standards.

- Preparing financial statement in accordance with appropriate standards, Journal entries, ledger accounts cash book maintenance.
- To enable the students to understand partnership account like admission, retirement, death and dissolution of partnership.
- To understand the concept of branch accounting and its system, Hire purchase and Instalment system.
- To enable the students to understand consignment, Bills of exchange, depreciation.
- To understand issue and redemption of shares and debentures, their types.
- Know the steps to liquidate the company, prepare liquidator's final statement of accounts.
- To have knowledge of right share, bonus share, stock option, E – trading, BSE, NSE and SEBI.

INDIAN BUSINESS ENVIRONMENT

- Understanding business environment at national and international level.
- Knowledge about various forms of organisation.
- Study about Business Process Management.
- Measuring implementation and impact of Liberalization, Privatization and Globalization on Indian Economy,
- Justifying performance, role, function, merits and demerits of Foreign Capital, Multinational Corporations and International corporation(IMF, IBRD, WTO and SAARC).

ENVIRONMENTAL STUDIES

- Understanding environmental concerns by the students at the under graduate level.
- Understanding the relationship of man with environment and help them change his attitude for more positive, proactive, eco- friendly and sustainable life styles.
- Getting information about climate change, Global warming, Acid rain, Greenhouse effect, Ozone and layer depletion.
- Cultivating attitudes of safeguard the environment built particularly with field experience.
- Realization of impact of human actions on the immediate environment and linkage with the larger issue.
- Getting information about Environment Protection Acts.

PRINCIPLES OF MANAGEMENT

- Supporting to Achieve Group Goals.
- Knowledge about motivating employees by providing financial and non-financial incentives.
- Evaluating the economic growth and development of an organisation.
- Understanding the relation between individuals, groups, deparments and between levels of

management.

- Comprehending the human resources productivity.

GLOBAL BUSINESS ENVIRONMENT

- To familiarize with global business environment.
- To make them understand about different trade policy on export and import.
- To develop knowledge about International Business.
- To create an awareness about various international trade, institutions (IMF, IBRD, IFC and IDA etc,.)
- To develop knowledge about different marketing strategies.

MANAGEMENT OF SERVICE AND MANAGEMENT INFORMATION SYSTEM

- To acquire the knowledge of various service sectors, banking and insurance hotel management, hospital and educational service etc,. and managing the service sectors.
- To acquire the knowledge of event management like corporate event, private event, small event, grand event, musical events, sports events, fashion shows, trade fairs and exhibitions.
- To acquire the knowledge and structure of Management Information System.
- Information of various levels of management, value of information in decision making.

QUANTITATIVE TECHNIQUES

- To learn about laws of indices, laws of logarithms, and its applications.
- To know arithmetic and geometric progression – business applications.
- To learn about ratio proportions and percentages.
- To learn about Matrices and determinants – operations and properties.

FUNCTIONAL MANAGEMENT

- To know the role of management in modern organisation.
- To understand role of HR managers, Training and Development, placement, methods of wage payment.
- To understand role of Financial Manager- profit maximisation, wealth maximisation, financial decisions and working capital management.
- To understand production management- plant location, layout, production planning and control.

COST ACCONTING

- To understand the concepts of cost accounting and to expertise in presenting cost centre and profit centre and preparing cost sheet.
- To have the knowledge on material cost and its methodologies, classification of overheads.
- To have the knowledge of computing wages under different methods.
- To understand the allocation, apportionment, re- apportionment and absorption of overheads.

MANAGEMENT ACCOUNTING

- Apply management accounting concepts and tools for the decisions making faced by a management.
- Apply management accounting concepts and tools to take financial decisions and cost ascertainment.
- Apply the techniques of management accounting for cost minimization and profit maximization.
- Knowledge about Ratio Analysis, various budgets, standard costing etc,.

BANKING IN INDIA

- After the successful completion of the course the students will be able to know the functions of banks.
- The students will be aware of credit control measures of central banking, various banks etc,.
- Gain knowledge about duties and responsibilities of collecting and paying bankers.

COMMERCIAL LAW

- It helps to understand the legal formalities require in business.
- It helps to resolve the legal issues occur in business.
- It helps to do business legally.
- To know the different types of contract, methods of contracts.

COMPANY LAW

- To know different types of company, legal obligations etc,.
- To enable students to know how forms a company.
- To have knowledge about Articles and Memorandum of Association.
- To have a knowledge of issue of shares and debentures.

ENTREPRENEURSHIP DEVELOPMENT

- Entrepreneurship Development involves a wide range of training and experience and designed to prepare students for starting and managing their own business.

- This is the subject which teach the students how to start their own business what quality should entrepreneur have what are the government schemes provided by small industries.
- It helps to get detail knowledge about the business plans and other things.

MARKETING MANAGEMENT

- Marketing management helps the students to analyse product design, promotion, selling and distribution.
- The students will focus more on the concepts and field work such as promotion, advertising, research and sells.
- Marketing is the subjects which give us the detail information about customer, sellers and manufacturers.

FINANCIAL MANAGEMENT

- This course enables the students which the knowledge about the Capital budgeting, Working capital, Cash management and better Financial management techniques.
- Financial decisions, Capital structure decisions and Dividend policy.
- Apply the fundamental concepts and tools of finance.
- Apply financial management concepts and tools to decision faced by a manager.
- Apply financial management concepts and tools to the financial decisions and dividend decisions faced by the firm.
- Evaluate the corporate governance structure of firms and examine the interactions between firm management and financial markets and stakeholders.
- Appraise the risk profile of the firm.

BUSINESS STATISTICS

- Acquaintance with some basic concepts in statistics. Making familiar with some elementary statistical methods of analysis of data viz. Measures of Central Tendency, Dispersion, Skewness and to interpret them.
- Analysis of data pertaining to attributes and to interpret the results.
- Acquainting with some basic concepts of probability. Ability to distinguish between random and non-random experiment. Ability to find the probabilities of various events.
- Ability to understand the concepts of conditional probability and independence of events. Ability to distinguish between univariate and bivariate probability distribution.

- Ability to understand the concept of correlation and computation of correlation coefficient. Interpreting the value of correlation coefficient and its use in regression analysis.

INCOME TAX

- To make the students know basic concepts of Income Tax.
- To gain knowledge about various Heads of Income.
- Understand the various deductions given under various Heads of Income.
- To know the deduction available under section 80C of Income Tax Act.

BUSINESS DECISION THEORIES

- Understanding the basic concepts of demand and supply and their determinants.
- Analyse how elasticity affects revenue, BEP and Demand analyse.
- Understanding the concepts of National Income and the methods of calculating National Income.
- To know the price and output decisions of all forms market structure and Application of price discrimination.
- Analysing cost function and difference between short run long run cost functions.

FINANCIAL SERVICES

- Students learn about various financial services provided by NBFC's and Merchant Bankers.
- Create awareness about the roles and functions of stock exchange and E- trading.
- To understand the rights and obligations of depositories, participants, issues and beneficial owners.
- Understand the consumer finance practices followed in India by banks and other financial institutions.

HUMAN RESOURCE MANAGEMENT

- HRM helps to understand the man power status or condition in the organization.
- HRM helps to understand human resource policies in the organization.
- HRM is the lifeblood of every originations flow by utilizing the human resources.
- HRM tell us how to deal with HR in decent manner.

INTERNATIONAL BUSINESS

- International business helps to understand the EXIM procedure.
- International business helps to understand the EXIM documentation.
- International business helps to know the contribution done towards country's development.

- International business helps to understand the domestic and foreign market conditions.

DEPARTMENT OF COMPUTER SCIENCE

Title of the paper: Object Oriented Programming using Java and Cloud Computing and Big Data Analytics

Semester: III Sem, V Sem

Programme: BCA

Number of hours: 4 hours + 3 Hours Practical

COURSE OUTCOME: JAVA

- Use an integrated development environnent to write,compile,run and test simple object oriented java programes.
- Java is platform-independent.One of the most significant advantages of Java is its ability to move easily from one computer system to another. The ability to run the same program on many different systems is crucial to World Wide Web software, and Java succeeds at this by being platform-independent at both the source and binary levels.
- Read and make elementary modifications to Java programs that solve real-world problems.
- Validate input in a Java program.
- Identify and fix defects and common security issues in code.
- Document a Java program using Javadoc.
- Use a version control system to track source code in a project.

Title of the paper: Data structures and file processing

Semester: II

Programme: BCA

Number of hours: 4Hrs+3Hrs Practical

COURSE OUTCOME:

- Develops skills in implementations and applications of data structures.
- Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms.
- Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
- Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs.
- Defines the meaning of iterative and recursive algorithms
- Demonstrate different methods for traversing trees.
- Compare alternative implementations of data structures with respect to performance.
- Compare and contrast the benefits of dynamic and static data structures implementations.
- Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack.
- Design and implement an appropriate hashing function for an application.
- Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.
- Implements basic algorithms for sorting and searching.
- Applies algorithms and data structures in various real-life software problems.

Title of the paper: Numerical and statistical analysis

Semester: IV Sem

Programme: BCA

Number of hours: 4 hours + 3 Hours Practical

COURSE OUTCOME:

Numerical analysis is concerned with all aspects of the numerical solution of a problem, from the **theoretical development and understanding of numerical methods** to their practical implementation as reliable and efficient computer programs.

The five reasons to study statistics are **to be able to effectively conduct research**, to be able to read and evaluate journal articles, to further develop critical thinking and analytic skills, to act a an informed consumer, and to know when you need to hire outside statistical help.

Based on numerical methods such as finite element method, boundary element method, and meshless method, numerical simulations for various problems in the field so of science, engineering, and society have developed rapidly in the recent decades.

Various numerical methods are presented for solving the problems in different fields, and the corresponding computational efficiency, accuracy, and convergence are studied as well.

With the development of big data, numerical simulation and combined data analysis will play a more important role for studying the problems in science, engineering, and society.

Moreover, the manuscripts on the theories of numerical simulation and data analysis for complicated science, engineering, or social problems.

Applications:: Solution of governing equations.

2. Critical Loads for Buckling a Column.

3. Static Analysis of a Scaffolding

4. Analysis of Natural Frequencies of a Vibrating Bar.

5. Stability of frameworks under external forces (bridges, houses, …). Mostly numerical linear algebra, sometimes differential equations are solved.

6. In hydrodynamics and aerodynamics: construction of cars, planes, boats. Usually PDE with finite element methods.

COURSE OUTCOME: Cloud computing and Big data Analytics (6hrs)

- Cloud Computing model enables your business to communicate and share more easily outside of the traditional methods. It allows better collaboration between employees, enabling multiple users to share and work on data and files at the same time.
- Cloud computing facilitates the access of applications and data from any location worldwide and from any device with an internet connection. Cost savings; Cloud computing offers businesses with scalable computing resources hence saving them on the cost of acquiring and maintaining them.
- Cloud computing allows people access to the same kinds of applications through the internet.
- Cloud computing is the future of enterprise applications and solutions. With cloud-based services, we rely on remote servers for our technological infrastructure
- Big Data solutions these data silos can be quickly integrated to provide valuable insights such as detection of **fraud** and abuse patterns, identification of best practices for safer and more efficient care delivery, and better epidemiology surveillance.
- Cloud computing and big data technologies aim to enhance the revenue of the company while reducing the investment cost. While Cloud manages the local software, Big data helps in business decisions.

Title of the paper: Computer Concepts of C Programming

Semester: I Sem

Programme: Bsc

Number of hours: 4 hours + 3 Hours Practical

COURSE OUTCOME:

- C is highly portable and is used for scripting system applications which form a major part of Windows, UNIX, and Linux operating system.
- C is a general-purpose programming language and can efficiently work on enterprise applications, games, graphics, and applications requiring calculations, etc.
- Able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.
- Demonstrate an understanding of computer programming language concepts.
- To be able to develop C programs on linux platform.
- Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.

- Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures.
- Student must be able to define union and enumeration user defined data types.
- Write the C code for a given algorithm.
- Develop confidence for self education and ability for life-long learning needed for Computer language.

Title of the paper: Fundamentals of Information Technology

Semester: II Sem

Programme: BCA

Number of hours: 6 hours

COURSE OUTCOME:

- Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming
- Write, compile and debug programs in C language and use different data types for writing the programs.
- Design programs connecting decision structures, loops and functions.
- Explain the difference between call by value and call by address.
- Understand the dynamic behavior of memory by the use of pointers.
- Use different data structures and create / manipulate basic data files and developing applications for real world problems.
- Understanding computer terminology helps with other technology. Having a good understanding of the terminology and jargon used with computers helps you be more efficient with other technology.
- For example, anyone connected to the Internet has a better understanding of using the Internet and connecting other devices.
- An introduction to the fundamentals of hardware, software and programming.
- An understanding of cyber laws and computer security

Title of the paper: DISCRETE TRANSFORMATION

Semester: I Sem

Programme: BCA

Number of hours: 6 hours

COURSE OUTCOME

1. Write an argument using logical notation and determine if the argument is or is not valid.

2. Demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof technique described.

3. Understand the basic principles of sets and operations in sets.

4. Prove basic set equalities.

5. Apply counting principles to determine probabilities.

6. Demonstrate an understanding of relations and functions and be able to determine their properties.

7. Determine when a function is 1-1 and "onto".

8. Demonstrate different traversal methods for trees and graphs.

9. Model problems in Computer Science using graphs and trees.

Title of the paper: SYSTEM SOFTWARE AND OPERATING SYSTEM

Semester: II Sem

Programme: BCA

Number of hours: 4 hours + 3 hours

COURSE OUTCOME

- Compare the functionality of different computing hardware structures and Operating Systems Structures.

- Discuss issues of Process Management including process structure, synchronization, scheduling and communication.
- Demonstrate memory management issues including advance techniques of paging, segmentation and virtual memory.
- Explain the operation of various File Management Algorithms.
- Discuss the issues related to I/O Sub-systems, Threats and specialized operating systems.
- Distinguish between Operating Systems software and Application Systems software.
- Describe commonly used operating systems.
- Identify the primary functions of an Operating System.
- Able to understand the basic components of a computer operating sys- tem, and the interactions among the various components.
- The course will cover an introduction on the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.

Title of the paper: Software Engineering
Semester: VI Sem
Programme: BCA
Number of hours: 6 hours

COURSE OUTCOME:

1. Basic knowledge and understanding of the analysis and design of complex systems.
2. Ability to apply software engineering principles and techniques.
3. Ability to develop, maintain and evaluate large-scale software systems.
4. To produce efficient, reliable, robust and cost-effective software solutions.
5. Ability to perform independent research and analysis.
6. To communicate and coordinate competently by listening, speaking, reading and writing English for technical and general purposes.
7. Ability to work as an effective member or leader of software engineering teams.
8. To manage time, processes and resources effectively by prioritising competing demands to achieve personal and team goals Identify and analyzes the common threats in each domain.

9. Ability to understand and meet ethical standards and legal responsibilities.

Title of the paper: Digital Electronics

Semester: I Sem

Programme: BCA

Number of hours: 4 hours + 3 Hours Practical

COURSE OUTCOME:

- **To understand and examine the structure of various number systems** and its application in digital design.
- The ability to understand, analyze and design various combinational and sequential circuits.
- Digital electronic circuits are main thing in digital electronics which is usually made from large assemblies of logic gate.
- The system which process discrete values is known as digital system. The significance of digital electronics is that **are inherently more reliable than analog**, in terms of information processing.
- Counters can be used in many areas of practical applications such as **microcontrollers, frequency synthesizers, analog to digital converters, digital clocks and timing circuits and circuits** used in communication systems
- Digital electronics are electric circuits that work on only two fixed values: "1" and "0". They **use a series of 1's and 0's to store and communicate information**. They can also perform math using just 1's and 0's. This is called Boolean math or Boolean logic.
- To develop skill to build, and troubleshoot digital circuits

Title of the paper : WEB TECHNOLOGY

Semester: VI

Programme: BCA

Number of hours : 4 hours + 3 Hour Practical

COURSE OUTCOME:

- The students are able to get knowledge about the basic web technology concepts that are required for developing web application.The key technology components are descriptive languages,server side program elements and client side program elements.
- Students are able to develop a dynamic webpage by the use of html (hyper text markup language).
- Students will be able to write a well formed XHTMl documents.
- The students will be able to Analyze a web page and identify its Elements and attributes like Paragraphs,Links,Headings,Lists,Tables,Images,Forms(Elements)
- Attruibutes-href attribute is used to create Link,src and alt attributes are used with Image elements.
- Create web pages using XHTML and Cascading style sheets(CSS),CSS is used to apply the different properties like font,color,margins,images,background properties to the related XHTML documents.
- Build dynamic web pages using Javascript(scripting language).
- Basics concepts of PHP like PHP with arrays and functions,simple programs of PHP.

Title of the paper :Desktop Publishing

Semester: V

Programme: BCA

Number of hours : 1 hour+ 2 Hour Practical

COURSE OUTCOME:

DTP: Desktop publishing

The students able to leran to create a publishing documents like invitations, business cards,visiting cards, before that Completes the necessary preparations for print and broadcast before starting the process of creating a graphic design.

Defines color model according to the typeof print,the dimensions of the study,visual resolution.

Performs the required corrections on all material used in design to print and broadcast.

Creates effective design based on design principles.

Defines the characteristics of the paper and propagation techniques.

Recognizes all necessary elements for printing Creates her/his designs.

Title of the paper: ANDROID APPLICATION

Semester: VI Sem

Programme: BCA

Number of hours: 1 hours + 2 hours

COURSE OUTCOME

- Android which is exclusively developed for mobile phones, is an efficient operating system or mobile platform empowering billions of devices with high-end functionality .
- It allows the user to do everything possible just as on a PC with several games, apps, movies, music, books etc available for download and use.
- In the Android Developer Fundamentals course, you learn basic Android programming concepts and build a variety of apps, using the Java programming language.
- Start with Hello World and work your way up to apps that schedule jobs, update settings, and use Android Architecture Components
    - Basic Android Development tools such as Eclipse, DDMS, Drawables, Listeners, and so on.
    - How to use various Layouts and Widgets in Android Applications.
    - How to create interactive applications in android with multiple activities including audio, video and notifications.
    - How to create applications using SQLite database.
    - How to publish your App on Google Play.
    - Use development tools, such as those found in the Android Developer's Toolkit to efficiently create, understand, debug and optimize Android applications.
    - Understand the key forces and constraints acting on handheld devices and know how to accommodate these when designing and building their own Android applications.
    - Know where to find additional sources of information to understand and solve Android-related problems.
    - Understand the Android platform's organization, patterns and programming mechanisms and be able to use them effectively to develop their own Android applications.

Title of the paper : Data Communication and Computer Network

Semester: IV

Programme: BCA

Number of hours : 4 hours + 2 Hours Tutorial

COURSE OUTCOME:

- This Course has been prepared for the computer science graduates to help them understand the basic to advanced concepts related to Data Communication and Computer Networking.

- Computer networking courses train students to connect local area networks (LAN), wide area networks (WAN) and wireless versions of both types. They also learn to connect hardware devices and set up Internet access. These skills can apply to a variety of careers. Assist others with network problems.

- Data communications and networking is a truly global area of study, both because the technology enables global communication, and because new technologies and applications often emerge from a variety of countries and spread rapidly around the world.

- Files can easily be shared between users. Network users can communicate by email and instant messenger . Security is good - users cannot see other users' files unlike on stand-alone machines. Data is easy to backup as all the data is stored on the file server .
- In this course students will also learn the new technologies like, Ethernet, IEEE 802.3,IEEE 802.5 & IEEE 802.5 configurations, frame formats.

- They aware about the different ISDN channels and congestion control mechanisms, bridging and routing algorithms, RSA algorithms.

Title of the paper : Operation Research

Semester: IV

Programme: BCA

Number of hours : 4 hours + 2 Hours Tutorial

COURSE OUTCOME:

- The term "operational research" was originally used in Britain during World War II to connote scientific research done to integrate new radar technologies into Royal Air Force tactics.
- Operations research is important because it is a helpful tool used to solve complex problems under uncertainty. Operations research helps in improving the productivity of the organizations. Operations controls provide significant information to the managers before making an important decision. It helps in making small decisions for important decisions for an organization.
- The basic tools of operations research are probability theory, Monte Carlo methods, s queuing models, transportation models, network models, game theory, linear and nonlinear programming, dynamic programming, Markov decision processes, input-output analysis, choice modelling.
- The central objective of operations research is optimization, i.e., "to do things best under the given circumstances." This general concept has great many applications, for instance, in agricultural planning, biotechnology, data analysis, distribution of goods and resources, emergency and rescue operations, engineering.
- This will help to solve the different transportation problems, method of finding IBFS to the problems, Travelling salesman problem, and also this will helpful in minimising the cost and maximising the profit.

Title of the paper: Digital Image Processing

Semester: V Sem

Programme: BCA

Number of hours: 4 hours + 3 Hours Practical

COURSE OUTCOME:

- **Digital Image Processing** is software which is used in image processing. For example: computer graphics, signals, photography, camera mechanism, pixels, etc.

- Digital Image Processing provides **a platform to perform various operations like image enhancing, processing of analog and digital signals, image signals**, **voice signals etc.** It provides images in different formats.
    - **Image sharpening and restoration:** The common applications of Image sharpening and restoration are zooming, blurring, sharpening, gray scale conversion, edges detecting, Image recognition, and Image retrieval, etc.
    - **Medical field:** The common applications of medical field are Gamma-ray imaging, PET scan, X-Ray Imaging, Medical CT, UV imaging, etc.
    - **Remote sensing:** It is the process of scanning the earth by the use of satellite and acknowledges all activities of space.
    - **Machine/Robot vision:** It works on the vision of robots so that they can see things, identify them, etc.
    - **IMAGE ENHANCEMENT**– It is amongst the simplest and most appealing in areas of Image Processing it is also used to extract some hidden details from an image and is subjective.
    - **IMAGE RESTORATION**– It also deals with appealing of an image but it is objective (Restoration is based on mathematical or probabilistic model or image degradation).
    - **IMAGE COMPRESSION**-It involves in developing some functions to perform this operation. It mainly deals with image size or resolution.

Title of the paper: Python

Semester: VI Sem

Programme: BCA

Number of hours: 1 hours + 2 Hours Practical

COURSE OUTCOME:

Python is **an interpreter, interactive, object-oriented programming language.**

Python is commonly used for **developing websites and software, task automation, data analysis, and data visualization**.

Python is **simply structured** easy to learn and fun to use, Python has been adopted by many non-programmers such as accountants and scientists, for a variety of everyday tasks, like organizing finances.

Its syntax, unlike most computer languages, reads like English, so it isn't stressful to pick up. It was named after Monty Python

- Multiple Programming Paradigms.
- Web Testing.
- Data Extraction.
- Artificial Intelligence (AI) and Data Science Researches.
- Web Application and Internet Development.
- Database Easy Access, Interface Customization, and Quick System Integration.
- Cyber security.

DEPARTMENT OF HINDI

COURSE OUTCOMES

- Students can work anywhere in India, as they know Hindi – Our National Language. In many other countries also, Hindi is used as an Official Language as well as second Language. So they can easily be employed easily in those countries also.
- As they are Practicing Translation from Hindi to English and English to Hindi and some other Languages as well, they can become Translators in many Central Govt Offices.
- They are learning Poetry and Grammar -so they can become creative writers or poets areauthors.
- By Reading and observing Drama's and one act plays they can become good actors. By having good communication skills and command over language one can becomes good speaker.

Having good command over particular language one can present himself in better way.

Learning Hindi in non-hindi region definitely one can achieve anything

DEPARTMENT OF FOLKLORE

1. Demonstrate thorough understanding and knowledge of people and their "lores", especially in the respective cultural contexts of the concerned students.
2. Develop research related skills while understanding the nuances of field- based research.
3. Show an ability to evolve multicultural competence through an investigation of different traditions and texts.
4. Reflect critical and reflective thinking through the ability to analyze not only written but oral texts too.
5. Illustrate commitments to lifelong learning necessary to understand and imbibe knowledge that is part of one's growing up and which is significantly associated with the aspirations and values

DEPARTMENT OF ENVIRONMENTAL STUDIES

ENVIRONMENTAL STUDIES

- Understanding environmental concerns by the students at the undergraduate level.
- Understanding the relationship of man with the environment and help them change his attitude for more positive, proactive, eco-friendly and sustainable life styles.
- Getting information about climate change, Global warming, Acid rain, Greenhouse effect, Ozone, layer depletion.
- Cultivating attitudes to safeguard the environment built particularly with field experience
- Realization of the impact of human actions on the immediate environment and the linkage with the larger issues.
- Getting information about Environment Protection Acts.

POST-GRADUATE DEPARTMENT OF COMMERCE

ACCOUNTING THEORY

The course provides the coverage of the meaning of accounting theory, its types, approaches to formulate accounting theory; the IASB's conceptual framework; definition,

recognition, measurement and disclosure of elements of financial statements; accounting regulation and policy in India.

The goal of this course is to provide the knowledge of accounting theory based on conceptual framework of accounting theory and also the critical thinking skills necessary to analyse and interpret accounting related transactions in accordance with accounting theory, and the financial reports generated by the accounting system.

CORPORATE GOVERNANCE AND BUSINESS ETHICS

The course provides coverage of concept of corporate governance, ethics, Corporate Social Responsibility and corporate governance in India and reforming of BOD and different Committees.

The aim of this course is to enable the student to understand the concept of corporate governance, help students to know about corporate ethics and cultural influences, impart knowledge of corporate social responsibility and accountability and to provide information about the corporate governance reforming committee reports in India.

FINANCIAL DECISIONS

Financial decision making assumes greater importance in maximising value of an organisation. This course is designed to focus on the analysis of three crucial long term financial decisions like Capital budgeting, Capital Structure and Dividend decisions.

To equip students with necessary skills to evaluate capital projects with a focus on advanced capital budgeting techniques like MIRR (Modified IRR) and selection of projects under conditions of risk and help students analyse the leverage and dividend decisions based on theoretical framework.

MARKETING MANAGEMENT

This course provides the coverage of marketing concepts, marketing in 21st Century, marketing environment, and market oriented strategic planning, E- commerce, online marketing.

On completion of this course the students would be able to understand the changing business environment, identify the indicators of management thoughts and practices and understand fundamental premise underlying market driven strategies.

BUSINESS POLICY AND ENVIRONMENT

This course provides the coverage of business as a social system, internal and external environment, business ethics, social responsibility and business policy**.**

The objective of this course is to provide the student the knowledge about human resources, their significance and managing them in organisations.

STATISTICS FOR BUSINESS DECISIONS

The course comprises of probability theories, sampling techniques, time series analysis and multivariate analysis.

The aim of this course is to enable a student to have knowledge about application ofprobability theory and sampling in different areas of commerce, time series analysis and application of multiple correlation and regression analysis.

CAPITAL MARKET INSTRUMENTS

Capital markets in recent times are flooded with new and innovative instruments enhancing vibrancy and volume of capital markets. Every advanced programme in commerce should consist of a course in analysis and evaluation of various instruments traded in capital markets today.

The course intended to equip students an opportunity to comprehend the role of capital markets, evaluate the various capital markets instruments like Stock, bonds, etc. and to know the basics of new instruments like futures and options.

HUMAN RESOURCE MANAGEMENT

This course provides the coverage of concept of HRM, Human resources planning and procurement, human resource development and compensational and rewards system.

The objective of this course is to provide the student the knowledge about human resources, their significance and managing them in organisations.

ORGANISATIONAL BEHAVIOUR

This course provides the coverage of scope of OB, different contributing discipline to OB, foundational of individual behaviour, motivational theories and foundations of group behaviour.

The objective of this course is to provide the student the knowledge about organisations, their constitution and the behaviour of people in organisations.

COMPUTER APPLICATIONS IN COMMERCE

This course is designed to provide knowledge and skills in computer applications in commerce. It focuses on computer applications in Accounting, Finance, Taxation, Statistics and Operations Research.

The objective of the course is to enable to students to understand online trading, online banking, and online submission of income tax and indirect tax returns, Tally and XBRL applications in Accounting and the usage of SPSS applications in statistical analysis.

STRATEGIC MANAGEMENT

This course provides the coverage of concept of strategic management, vision, mission and purpose of business definition, strategic analysis and choice strategic implementation and evaluation.

Apart from general management, strategic management is acquiring importance in the business due to the increased competition. Students of commerce will have to have the knowledge of Strategic management. With this objective of this course is introduced to the students at postgraduate level.

STOCK MARKETS

Stock markets are more popular today as they provide a wonderful opportunity to the general public to invest their savings. This course provides the coverage of fundamentals of stock markets, indices, instruments and trading in stocks and shares including Demat accounts.

The course is designed to meet the expectations of non-commercial graduates and intended to help students to understand the role of stock markets as an avenue for investments, understand the different type's stock market instruments, and provide them necessary knowledge regarding trading in stocks.

BUSINESS RESEARCH METHODS

This course provides the coverage of business research methods, ethical issues in business research methods, research process, data collection methods, designing of questionnaire, various statistical tools like univariate and bivariate analysis and report writing.

The course is envisaged to provide the student the knowledge and skill related to conduct of research related to business. This basic course familiarizes the student with the technicalities of executing a research assignment, in particular the applied research domain.

INTERNATIONAL BUSINESS

This course provides the coverage of international marketing, international trade, international global sourcing, international business environment, multinational corporations andIndia in the global setting.

This specialization course on International Business is designed to equip the student with policy and practice skills related to international business. Upon completing this course, the student will be able to understand the intricacies of running business across the political territories. She/he would also get an insight in to the policy environment in India regarding the international business.

MANAGEMENT OF NON-PROFIT ORGANISATIONS

This course provides the coverage of non-profit enterprises, accounting and finance in the non-profit organizations, human resource management in non-profit organization and governance and professionalism in NPO.

This is an introductory course designed to give the student basic inputs related to management of non-profit organizations. The place of non-profit sector vis-à-vis State and Business and different functional dimensions of professionally managing the non-profit organizations are introduced to the students.

PORTFOLIO MANAGEMENT

Portfolio analysis and management is a course in financial management. This includesportfolio investment analysis, risk analysis and optimal combinations of securities which lead to create effective return on investment.

Candidates will be able to apply appropriate portfolio decisions and recommend relevant methods of evaluation techniques taking into account other factors affecting investment decisions.

BUSINESS TAXATION SPECIALISATION – Paper 1: INDIRECT TAX LAW AND PRACTICE

This paper is to prepare the students to understand the Indian Tax System and its operation in the global economy. The importance of the indirect taxes in the Indian market oriented economy

and its role in achieving the objectives of modern welfare governments.

On completion of this course the students would be able to understand the importance of indirect taxes in the Indian developing economy and its contribution for the economic development, understand the implications of indirect taxes on the taxable capacity of the society at large, understand the role of tax consultant in preparing the tax planning, and understand the concept of indirect tax in the changing global economy.

FINANCIAL ACCOUNTING SPECIALISATION – Paper 1: CONTEMPORARY AREAS OF FINANCIAL ACCOUNTING

This course focuses on contemporary areas of financial accounting which are likely to be of interest to a wide range of stakeholders including investors, employees, society, government agencies and public at large. The course provides the coverage of accounting for the effects of price level changes, interim, segment and tax reporting, hedge accounting, human resource, social and value added accounting.

The aim of this course to provide knowledge and skills to the students on contemporary areas of financial accounting and to bring attitudinal changes to innovations in accounting and to develop professional knowledge and skills in contemporary areas.

FINANCIAL MANAGEMENT SPECIALISATION – Paper 1: FUTURES, OPTIONS AND SWAPS

The course is designed to provide basic knowledge about risk management and the new instruments of capital market i.e., derivatives used for managing risk. It mainly comprises of a description of the concepts of risk management, forwards/futures, options and swaps along with the trading mechanics and pricing of these instruments.

The course aims to help the students in Basic understanding of risk management, Critical understanding of derivative markets and instruments, understanding the trading mechanics and technology involving derivative contracts and provide the basic valuation models for pricing the derivative assets.

HUMAN RESOURCE MANAGEMENT SPECIALISATION – Paper 1: STRATEGIC MANAGEMENT OF HUMAN RESOURCES

This course Strategic Management of Human Resources covers concept of HRM, objectives, corporate strategy in HRM practice, Industrial relations perspectives, trends in HRM, Grievance procedure and ethical issues in HRM

The course is envisaged to provide the student the knowledge related to management of human resources in business enterprises. This course familiarizes the student with various facets of human resources and their management.

MANAGEMENT ACCOUNTING SPECIALISATION – Paper 1: MARGINAL COSTING AND DECISION MAKING

This course provides the coverage of concept of cost behaviour analysis, break even analysis, multi product break even analysis, graphs, marginal costing and managerial decisions and direct costing.

The course in marginal costing and decision making is aimed at equipping the students with the knowledge and skill relating to marginal costing as a tool for evaluating a wide range of managerial decisions involving make-or-buy, pricing, export offers, temporary short-term of operations, discontinuance of a product line, etc,.

SOCIAL ENTREPRENEURSHIP

This course provides the foundation of social entrepreneurship as a domain knowledge covering the concept and importance of social entrepreneurship, incorporation and source of funding social enterprises.

The course is structured to make the student familiar with the concept of Social Entrepreneurship and the process of establishing and managing a social enterprise. The emphasis of the course is to make the student understand the possibilities of pursuing an entrepreneurial path and demonstrating the potential for social enterprises in emerging economies. The course content is designed so as to facilitate the students from any discipline understand and appreciate the concepts and technical details.

INTERNATIONAL ACCOUNTING

This course is designed to provide a deeper understanding of international accounting issues related to global financial reporting. It focuses on major diversities and challenges of financial reporting in the global arena, harmonization and international financial reporting standards. It also covers accounting for foreign currency transactions and major translation methods. It focuses on main issues in international financial statement analysis.

The aim of this course to provide knowledge and skills to the students on areas of accounting at international level and to bring attitudinal changes to meet challenges and issues of international accounting.

OPERATIONS RESEARCH

The course Operations Research covers linear and integer programming, transportation and assignment problems and their applications in decision making in business.

The objective of the course is to acquaint the students with the use of quantitative models in decision making.

FOREIGN EXCHANGE MANAGEMENT

This course focuses on international financial environment, foreign exchange flows, foreign exchange markets and payments.

DSC 1.2: Basic Economics – I (Economic Analysis -1)
Course Outcomes:
By the end of the course the student will be able to:

1. **Identify the facets of an economic problem.**
2. **Learn basic economic concepts and terms.**
3. **Explain the operation of a market system;**
4. **Analyse the production and cost relationships of a business firm;**
5. **Evaluate the pricing decisions under different market structures; and**
6. **Use basic cost-benefit calculations as a means of decision making (i.e., thinking like an economist)**

Paper – Contemporary Indian Economy (DSC)

i. **Understand the current problems of Indian Economy ii. Identify the factors contributing to the recent growth of the Indian economy**
ii. **Evaluate the impact of LPG policies on economic growth in India**
iii. **Analyze the sector specific policies adopted for achieving the aspirational goals**
iv. **Review various economic policies adopted**

1.5: Pre-Reforms Indian Economy (OEC)

i. **Trace the evolution of Indian Economy**
ii. **Identify the structural features and constraints of the Indian economy**
iii. **Evaluate planning models and strategies adopted in India.**
iv. **Analyze the sector specific problems and contributions towards overall economic growth**
v. **Review various economic policies adopted**

DSC 2.2: Basic Economics II

1. Understand the operation of the overall economic system;
2. Calculate national income and related aggregates
3. Explain the relationship between macroeconomic aggregates;
4. Analyze the nature of business cycles and policies towards controlling them
5. Evaluate the macroeconomic policies for solving major problems like poverty and unemployment

DSC 2.3 : Karnataka Economy

1. Understand the nature of economic growth and problems of Karnataka state.
2. Explain the process of structural growth in Karnataka economy,
3. Evaluate the policies and programs undertaken by the Govt. of Karnataka for bringing about socio-economic development

OEC 2.5: Contemporary Indian Economy

i. **Understand the current problems of Indian Economy**
ii. **Identify the factors contributing to the recent growth of the Indian economy**
iii. **Evaluate impact of LPG policies on economic growth in India**
iv. **Analyze the sector specific policies adopted for achieving the aspirational goals**
v. **Review various economic policies adopted.**

DSC – 3.1 Micro Economics

1. Understand introductory economic concepts.
2. Recognize basic supply and demand analysis.
3. Recognize the structure and the role of costs in the economy.
4 Describe, using graphs, the various market models: perfect competition, monopoly, monopolistic competition, and oligopoly.
5. Explain how equilibrium is achieved in the various market models.
6. Identify problem areas in the economy, and possible solutions, using the analytical tools developed in the course

DSC – 3.2 Mathematics for Economics

1. Perform basic operations in Sets and functions and Matrix algebra.
2. Calculate limits, derivatives of economic functions and identify the nature of relationship.
3. Calculate maxima and minima of function.

OEC – 3.1 Rural Economics

1. **To understand the basics of rural development,**
2. **To study the characteristics, problems, and programs of rural redevelopment**
3. **To study the trends and patterns of economic activities in rural areas**
4. **To study the role of infrastructural facilities and governance in rural development**
5. **To enable the students to know about the significance of rural enterprises and agricultural allied activities.**

DSC – 4.1 Macro Economics

1. Understand the Theories of National Income Accounting
2. Explain the process of Consumption and Investment Functions
3. Evaluate the Concept of Multiplier and Inflation.

DSC – 4.2 Statistics for Economics

1. **Understand the nature of Data and their presentation**
2. **Calculate descriptive statistics like measures of central tendency and dispersion**

3. **Apply statistical techniques like correlation and regression in economic analysis.**

DSC – 9 . Public Economics

1. Understand introductory Public Finance concepts.
2. Study the causes of market failure and corrective actions.
3. Understand the impact, incidence and shifting of tax.
4. Study the economic effects of tax on production, distribution and other effects.
5. Enable the students to know the Principles and Effects of Public Expenditure.
6. Understand the economic and functional classification of the budget; Balanced and Unbalanced budget.
7. Understand the Burden of Public debt and know the Classical/ Ricardian views, Keynesian and post-Keynesian views
8. To acquaint with the advantages and disadvantages of Deficit Financing.

DSC – 10 . Development Economics

1. **Understand the basic concepts and measurements of Development.**
2. **Learn some classical and partial theories of development economics and identify the difference.**
3. **Identify the difference between Developed and Developing Countries.**
4. **Analyze and tackle the development issues effectively.**

DSC – 12 . Indian Banking and Finance

1. Understand the structure of Indian banking and the role of banks in monetary policy.
2. Analyze the functioning of banks and different types of accounts and other services offered by the bank.
3. Evaluate recent developments in the Indian banking sector, including digital banking, payment banks, and non-performing assets.
4, Describe the overview of the Indian financial system, including financial markets, financial instruments, and financial regulation.
5. Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy.
6. Develop critical thinking and analytical skills in evaluating various financial products and services offered by banks and capital markets.

DSC –13. International Economics

1. **Understand the international trade theories and their application in international trade.**
2. **Explain the concept of terms of trade and demonstrate the effect of trade barriers; and display the ability to analyze the stages of economic integration.**
3. **Understand the concept of BoP and assess the BoP position and examine the changes in forex rate.**
4. **Analyze the role of international trade and financial institutions**

5. **Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues.**

DSC – 14. Indian Public Finance

1. Understand the structure of Indian Public Finance.
2. Enable the students to know the source and nature of public revenue and expenditure.
3. Understand the Budget and different concept of deficits.
4. Know the public debt and its management
6. Understand the fiscal and monetary policy and their tools and importance.
7. To enable the students to know the Indian federal financing system and Financial Commissions,

DSC – 16. Environmental Economics

1. Understand how economic methods can be applied to environmental issues facing society.
2. Examine the linkages between Environmental Degradation and Economic Development.
3. Develop an informed view regarding the potential of economics to help societies achieve their environmental goals.
4. Demonstrate good inter-personal and communication skills through writing an essay and contributing to critical discussion.
5. Analyze environmental problems and assess environmental policies.

This specialization course on International Business is designed to equip the student with policy and practice skills related to international business. Upon completing this course, the student will be to understand the intricacies of running business across the political territories. She/he would also get an insight in to the policy environment in India regarding the international business.

INTERNATIONAL FINANCIAL MANAGEMENT

As there has been a significant increase in multinational corporate activities; multinational finance is an added dimension of every advanced course in the area of finance. Hence this course has been designed to highlight the important finance functions of an MNC operating in India.

To enable students to understand the reasons, problems in internal finance management, foreign currency management, modes of payment, source of finance available etc as far as MNC operations/ firms concerned.

PROJECT WORK:

The project work brings practical knowledge among the students regarding research, through the collection of primary data and secondary data and analysing them for better decision making. It enhances the knowledge of statistical tools and techniques used in conducting the academic research or business research.

BUSINESS TAXATION SPECIALISATION – Paper 2: CORPORATE TAX LAW AND PLANNING

This course is focus on different heads of income, taxable in the hands of companies, computation of grass total income, deduction, exemptions, set off and carry forward of loss. Tax planning for reducing the tax burden, allocation of investments, and maximize the company wealth. As a tax consultant of the corporate tax laws of the company to give advice to the drawing officers regarding TDS, advance payment of tax and remittances of tax, for his employees.

This course is intended to enable the students to understand the incidence based and residential status of the companies, understand the deferent types of companies under corporate income tax act, understand the different sources of income for corporate assesses, analyse the basic principal of tax planning to reduce the tax burden of the company and understand the roleof tax consultant relating to TDS, Advance payment of Tax, remittance of corporate income tax, preparation of various Forms.

FINANCIAL ACCOUNTING SPECIALISATION – Paper 2: INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

The International Financial Reporting Standards (IFRS) issued by International Accounting Standards Board (IASB) are gaining recognition as Global Reporting Standards. This course is designed to provide a deeper understanding of International Financial Reporting Standardsissued

by IASB.

The aim of this course is to acquire knowledge, comprehension and capability to apply in the real world scenario of the accounting concepts, principles and interpretations discussed in the required pronouncements of International Financial Reporting Standards issued by the IASB.

FINANCIAL MANAGEMENT SPECIALISATION – Paper 2: STRATEGIC FINANCIALDECISIONS

Financial decisions need to be aligned with overall corporate strategy. This course is introduced to provide an interface of financial policy and strategic management process mainly focusing on financial restructuring, innovative financing strategies and risk management.

The objective of this course is to acquaint students with the advanced concepts of financial management and the application of the same in developing financial strategies for the organisation.

HUMAN RESOURCE MANAGEMENT SPECIALISATION – Paper 2:INTERNATIONAL HUMAN RESOURCES MANAGEMENT

This course covers broader framework of international HRM covering the major functions including HR Planning, performance management and issues relating to expatriation.

The course is envisaged to provide the student the knowledge related to management of human resources in business enterprises. This course familiarizes the student with various facets of human resources and their management.

MANAGEMENT ACCOUNTING SPECIALISATION – Paper 2: COST MANAGEMENT

This course provides the coverage of a broader framework of various tools and strategies used for cost management and control.

The course is aimed at helping the students to understand the scope and need for cost control and management, familiarise themselves with the basic cost control and management tools, understand the importance of statistical tools and operation research in cost control and management.