

Courses offered by the institution that focus on employability/ entrepreneurship/ skill development during the year – 2021-22

Course Code: 211137	Course Title: DSC 1: Basic Economics – I
Course Credit (L:T:P): 3 (3:0:0)	Teaching Hours/Week: 3 Hours
Total Contact Hours: 42 Hours	Formative Assessment Marks: 40
Duration of Exam: 2 $\frac{1}{2}$ Hours	Summative Assessment Marks: 60

Course Outcomes:

CO1. Identify the facets of an economic problem and Examine the basic economic concepts and terms.

CO2. Illustrate the operation of a market system, analyze the production and cost relationships of business firms.

CO3. Evaluate the pricing decisions under different market structures; and Use basic cost-benefit calculations as a means of decision making

Content of Basic Economics 1	42 Hrs
Unit-1 Basic Concepts in Economics:	14
Chapter No. 1 Nature and Scope of Economics: Meaning of Economics Nature of Economics Scope of Economics Methods of Economics	5
Chapter No. 2 Thinking Like an Economist: Thinking Like an Economist The Economist as Scientist The Economist as a Policy Adviser	4
Chapter No. 3 Economic System: Meaning and Types of Economic Systems Circular Flow of Economic Activities Evolution of the Present Economic System Practicum: 1. Group Discussions on Choice Problem Assignment on Types of Economic Systems	5

Unit – 2 Demand, Supply and Markets:	14
Chapter No. 4. Firms and Households:	4
Meaning of Firms and Household	
Relationship Between Firms and Household	
Input and output markets	
Chapter No. 5. Demand and Supply:	5
Individual Demand	
Market Demand	
Determinants of Demand & Supply	
Market Equilibrium	
Chapter No. 6. Elasticity and its Measurement:	5
Meaning & Types of Elasticity of Demand	
Price, Income and Cross Elasticity of Demand	
Measurement of Elasticity of Demand	
Determinants of Elasticity of Demand	
Practicum: 1. Estimation of Demand and Supply Elasticities	
2. Solving an Equilibrium Problem	
Unit – 3 Cost and Market Structures:	14
Chapter No. 7 Production and Production Function:	4
Meaning and types of production Function	
Total Product	
Average Product	
Marginal Product	
Chapter No. 8. Production, Cost and Revenue Curves:	5
TC, AC and MC	
Cost in the Short-run	
Fixed Costs and Variable Costs	
Long run AC and MC	
TR, MR and AR	
Chapter No. 9. Market Structure:	5
Markets: Meaning and Features of Perfect and Imperfect/Monopolistic Competition	
Meaning and Features of Monopoly, Duopoly and Oligopoly	
Practicum: 1. Calculation of various costs, a mini-project can be taken up.	
2. Studying the real-life pricing mechanism through a project/ case studies	

References :

1. Cohen, A.J. (2020). *Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText* (updated 2nded.). Toronto, ON: Pearson CanadaInc. Type: Textbook:ISBN:9780136716532
2. Cohen, A.J. (2015). *Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText* (2nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook:ISBN:9780133899368
3. Case Karl E. and Fair Ray C. Principles of Economics, Pearson Education Asia, 2014.
4. Mankiw N. Gregory. Principles of Economics, Thomson, 2013.
5. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, New York, 2011

Web links:

- <https://leverageedu.com/blog/nature-and-scope-of-economics>
- <https://old.amu.ac.in/cmp/studym/100007461https://corporatefinanceinstitute.com/resources/economics/economic-system>
- https://testbook.com/learn/economics-demand-and-supplyhttps://www.tutorialspoint.com/managerial_economics/theory_of_production.htm
- <https://www.analyticssteps.com/blogs/simple-guide-perfect-and-imperfect-competition>

Course Articulation Matrix - 211137

PO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO's												
CO1	2	1	1	1	1	2	2	1	1	1	-	2
CO2	2	2	1	1	2	2	2	1	1	1	1	2
CO3	3	2	2	2	2	2	1	1	1	1	-	2
Weighted Average	2.3	1.6	1.3	1.3	1.6	2	1.6	1	1	1	1	2

Course Code: 213131	Course Title: Principles of Marketing
Course Credits: 4. (L:T:P): 4:0:0	Teaching Hours/Week: 04 Hours
Total Contact Hours: 64 Hours	Formative Assessment Marks: 40
Exam Duration: 2 1/2 Hours	Semester End Examination Marks: 60

Course Objective:

To enable students to understand the basic concepts and principles of Marketing

Course Outcome:

- CO1- Deal with Marketing Environment, Marketing Mix and Online Marketing.
- CO2- Identify the Stages involved in New Product Development and PLC.
- CO3-Know the role of Pricing Strategies, Physical Distribution modes.
- CO4- Application of Principles of marketing by business firms.

UNIT – I Introduction to Marketing: (12 Hours)

Meaning and Definition of Market, Marketing - Core Marketing Concepts - Marketing Mix - Marketing environment - Functions of Marketing. 4Ps and 7Ps of marketing mix. Online Marketing - Relationship between Technology, Globalisation, Social Responsibility and online marketing.

UNIT – II Product : (12 Hours)

Meaning of a Product - Product Plan - Diffusion (Adoption) of Innovations - New Product idea - Stages in New Product Development - Causes for Failure of a new product - Product life cycle and Marketing strategy.

UNIT – III Price and Promotion: (16 Hours)

Price: Meaning – Pricing Strategy – Types of Pricing Strategies. Promotion: Meaning and Role of Promotion – Types of Promotion – Personal selling – Advertising – Publicity and Sales promotion - Elements of Promotional mix – Factors affecting Promotion Mix.

UNIT - IV Place in Marketing mix: (14 Hours)

Channels of Distribution – Types of Channels of Distribution - Middlemen and Distribution - Selection of the type of Channel - Retailing – Nature and Importance – Non-storeretailing - Wholesaling and Physical Distribution - Nature and Importance of Wholesaling and Physical Distribution.

UNIT – V Consumer Behaviour: (10 Hours)

Meaning - Features - Scope - Importance - Models of Consumer Behaviour - Consumer reference groups and their types – Consumer Behavior in Online marketing.

SKILL DEVELOPMENT

1. Name any five FMCG companies in India and identify the pricing strategy used by each one of them.
2. Select any five firms in automobile industry and identify the promotional methods used by each of the firm.
3. Identify any five products that failed in the market and identify the causes of failure for each of the products.
4. Select any five products and identify the various channels of distribution used for each of them.
5. Identify a product in the growth stage and write about 4Ps of marketing in it.

Books for Reference

1. Principle of Marketing - Philip Kotler, Gary Armstrong and Prafulla Agnihotri, Pearson Publication
2. Principles of Marketing - Robert H. Utaraid and Brajendra Kr Gupta
3. Principles of Marketing - Charles W Lamb, Cengage India Learning Pvt Ltd
4. Principles of Marketing - Dr Amit Kumar, Sahitya Bhawan Publications
5. Marketing - Grewal and Levy, McGraw Hill Publication

Web links:

<https://engaiodigital.com>

<https://www.superheuristics.com>

Course Articulation Matrix – 213131

Course/Program Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	-	2	1	1	-	3	-	1
CO2	2	2	2	2	1	1	1	1	2	2	1	1
CO3	1	2	2	2	2	1	1	2	2	2	1	1
CO4	2	1	1	-	-	-	1	1	1	2	-	1
W/AVG	1.75	1.75	1.5	2	1.5	2	1	1.25	1.25	2.25	1	1

Course Code: 214129	Course Title: Management Principles & Practice
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56 Hrs	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60
Pedagogy: Classroomslecture,tutorials,Groupdiscussion,Seminar,Casestudies&field worketc.,	
Course Outcomes: On successful completion of the course, the students will;	
CO1: Acquire knowledge on the concepts of business management, principles and function of management.	
CO2: Analyze and interpret the process of planning and decision making.	
CO3: Design organization structures based on authority, task and responsibilities.	
CO4: Gain knowledge and apply the principles of direction, importance of communication, barrier of communication, motivation theories and leadership styles.	
CO5: Analyze the real time scenarios requirement of good control system and control techniques.	
CO6: Evaluate the concepts of CSR as a device for promoting sustainable development.	
Syllabus:	Hours
Module No.1: INTRODUCTION TO MANAGEMENT	10
Introduction –Meaning, Schools of Management Thought (in brief), Nature and Characteristics of Management - Scope and Functional areas of Management; Management as a Science, Art or Profession; Management and Administration; Principles of Management.	
Module No.2: PLANNING AND DECISION MAKING	08
Nature, Importance and Purpose of Planning-Planning Process; Objectives; Types of plans (Meaning only); Decision making-Importance and steps; MBO and MBE (Meaning only)	
Module No.3: ORGANIZING AND STAFFING	12
Nature and purpose of Organization; Principles of Organizing; Delegation of Authority; Types of Organization- Departmentation, Committees; Centralization vs Decentralization of Authority and Responsibility, Span of Control; Nature and importance of Staffing	
Module No.4: DIRECTING AND COMMUNICATING	12
Meaning and Nature of Direction, Principles of Direction; Communication-Meaning and Importance, Communication Process, Barriers to Communication, Steps to overcome Communication Barriers, Types of Communication; Leadership – Meaning, Formal and Informal Leadership, Characteristics of Leadership; Leadership Styles – Autocratic Style, Democratic Style, Participative Style, Laissez Faire Leadership Styles, Transition Leadership, Charismatic Leadership Style.	
Module No.5: COORDINATING AND CONTROLLING	10
Coordination –Meaning, Importance and Principles. Controlling-Meaning and steps in controlling, Essentials of Effective Control system, Techniques of Control (in brief).	

Module No. 6: BUSINESS SOCIAL RESPONSIBILITY AND MANAGERIAL ETHICS	04
Business Social Responsibility- Meaning, Arguments for and against Business Social Responsibility; Green management concepts; Managerial Ethics – Meaning- Importance of Ethics in Business, Factors that determine Ethical or Unethical behavior.	
Skill Developments Activities:	
<ol style="list-style-type: none"> 1. Two cases on the above syllabus should be analyzed by the teacher in the classroom and the same needs to be recorded by the student in the Skill Development Book. 2. Draft different types of Organization structure. 3. Draft Control charts. 	
Text Books:	
<ol style="list-style-type: none"> 1. Stephen P. Robbins, Management, Pearson 2. Koontz and O'Donnell, Management, McGraw Hill. 3. L M Prasad, Principles of management, Sultan Chand and Sons 4. V. S. P. Rao/Bajaj, Management process and organization, Excel Books. GH25 5. Appanniah and Reddy, Management, HPH. 6. T. Ramaswamy: Principles of Management, HPH. 	
Note: Latest edition of textbooks may be used.	

Course Articulation Matrix - 214129

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	-	1	1	-	1	1	2	1	1
CO2	2	2	2	1	1	1	2	2	2	2	-	2
CO3	2	1	2	1	1	1	-	2	1	1	-	2
CO4	2	2	2	-	2	1	-	2	1	3	-	1
CO5	2	3	2	2	2	1	1	1	2	2	1	1
CO6	3	2	1	2	2	1	3	2	2	2	1	2
WA	2.16	1.83	1.6	1.5	1.5	1	2	1.66	1.5	2	1	1.5

Semester I

Course Code: 212149

Course Title:

DSC(1) - Computer Fundamentals and Programming in C

(Theory)

DSC(1) Lab - C Programming Lab (Practical)

Course Credits (L:T:P): 06 (4:0:2)

Hours of Teaching/Week: 04 (Theory) + 04 (Practical)

Total Contact Hours: 56 Hours (Theory)

Formative Assessment Marks: 40 (Theory)

56 Hours

25 (Practical)

(Practical)

Exam Duration: 2½ Hours (Theory)

Semester End Examination Marks: 60 (Theory)

3 Hours (Practical)

25 (Practical)

Course Outcomes (COs):

CO 1: Acquire knowledge on computers and exhibit the potential of designing an algorithmic solution to a problem.

CO 2: Design and develop C programs using various Datatypes, Input Output Statements, Operators and Expressions.

CO 3: Contrivance C programs using Control Structures, 1D Array, 2D Array and String Functions.

CO 4: Develop and implement C Programs using concepts like Pointers, User Defined Functions, Recursion and User Defined Datatypes.

Course Content

Content	Hours
UNIT - 1	
Fundamentals of Computers: Introduction to Computers-Computer Definition, Characteristics of a Computer, Applications of a Computer, Generations of Computers, Types of Computers, Basic Organization of a Digital Computer; Number Systems Different Types, Conversion from One Number System to Another; Computer Codes – ASCII; Boolean Algebra – AND, OR and NOT with Truth Tables; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High Level Languages; Translators-Assembler, Interpreter and Compiler; Steps in Problem Solving, Planning a Computer Program – Algorithm (Features, Writing an Algorithm, Performance) and Flowchart with Examples. Skill Based/ Participative/Experimental Learning Case Study on Problem Solving Steps & Algorithms.	14
UNIT - 2	
Introduction to and Basic Concepts in C Programming: Features of C; Structure of a C Program with Examples, Compilation process in C; C Character Set; C tokens - Keywords,	14

Identifiers, Constants and Variables; Datatypes; Declaration & Initialization of Variables.

Input and Output Statements: Formatted I/O Functions - printf() and scanf(), Control Strings and Escape Sequences, Output Specifications with printf(); Unformatted I/O Functions - getchar(), putchar(), gets() and puts().

C Operators & Expressions: Arithmetic Operators; Relational Operators; Logical Operators; Assignment Operators; Increment & Decrement Operators; Bitwise Operators; Conditional Operator; Special Operators; Operator Precedence and Associativity; Type Conversion.

Skill Based/ Participative/Experimental Learning – Group Assignment.

UNIT - 3

Control Structures: Decision Making Statements - simple if, if else, nested if else, else if ladder, switch; break & continue statements; Looping Statements - Entry and Exit Controlled Statements: while, do-while, for and nested loops.

Arrays: One-Dimensional Array - Declaration, Initialization, Memory Representation and Row & Column Major Addressing; Two-Dimensional Array - Declaration, Initialization and Memory Representation.

14

Strings: Declaring & Initializing String Variables; String Handling Functions - strlen, strcmp, strcpy, strcat, strncpy, strncmp and strncat; Character handling functions - toascii, toupper, tolower, isalpha, isnumeric.

Skill Based/ Participative/Experimental Learning – Activity to understand various Control Structures.

UNIT - 4

Pointers in C: Understanding Pointers - Declaring and Initializing Pointers, Accessing Address and Value of Variables Using Pointers; Pointers and Arrays; Pointer Arithmetic; Advantages and Disadvantages of Using Pointers.

User Defined Functions: Need; Format; Components - Return Type, Name, Parameter List, Function Body, Return Statement and Function Call; Categories - With and Without Parameters and Return Type; Recursion; Difference between Iterative and Recursive Functions.

14

User Defined Data Types: Structures - Definition, Advantages, Declaring Structure Variables, Accessing and Initializing Structure Members, Array and Structures.

Unions - Definition; Difference Between Structures and Unions.

Skill Based/ Participative/Experimental Learning – Quiz.

Text Books:

1. Computer Fundamentals: Anita Goel, Pearson Publication.
2. Problem Solving with C: M T Somashekara, D S Guru and K S Manjunatha, PHI Publication.
3. C in Depth: S K Srivastava and Deepali Srivastava, BPB Publications.

References:

1. Computer Fundamentals: Pradeep K Sinha and Priti Sinha, 6th Edition, BPB Publication.
2. Programming in C: V Rajaraman, PHI Publication.
3. Programming in C: Ashok N. Kamthane, Pearson Publication.

4. https://www.w3schools.com/c/c_intro.php
5. <https://www.tutorialspoint.com/cprogramming/index.htm>
6. <https://www.youtube.com/watch?v=KJgsSFOSQv0>
7. https://www.youtube.com/watch?v=eEo_aacpwCw

C Programming Lab

Part A

Write a C Program to:

1. Read and print different Datatypes.
2. Demonstrate Assignment, Arithmetic and Increment & Decrement Operator.
3. Demonstrate if-else statement.
4. Demonstrate else-if ladder.
5. Demonstrate switch statement.
6. Demonstrate do-while loop.
7. Demonstrate while loop.
8. Demonstrate for loop.
9. Implement Single Dimensional Array.
10. Implement Two Dimensional Array.

Part B

Write a C Program to:

1. Find the length of a string without using built-in function.
2. Demonstrate various string built-in functions.
3. Demonstrate the use of pointers.
4. Implement a function without parameters and return type.
5. Implement a function with parameters and without return type.
6. Implement a function without parameters and with return type.
7. Implement a function with parameters and return type.
8. Demonstrate the difference between Call by Value and Call by Reference.
9. Demonstrate recursion.
10. Demonstrate the difference between Structure and Union.

Note: Student has to execute all Programs in each part to complete the Lab Course.

Course Articulation Matrix - 212149

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	2	-	1	1	1	1	1	1	1	2
CO 2	2	2	2	-	2	-	-	-	2	2	-	2
CO 3	2	2	1	1	2	1	-	1	2	2	-	2
CO 4	2	2	1	-	2	1	-	1	1	1	-	2
Weighted Average	2	2	1.5	1	1.75	1	1	1	1.5	1.5	1	2

Course Code: 214131	Course Title: Marketing Management
Course Credit (L:T:P): 4(4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60
Pedagogy: Classroomslecture,tutorials,Groupdiscussion,Seminar,Casestudies & field Work etc.,	
Course Outcomes: On successful completion of the course, the Students will; CO1: Acquire knowledge on the concepts and functions of marketing. CO2: Analyze the marketing environment impacting the business. CO3: Segment the market and analyze consumer behaviour CO4: Gain knowledge about 4P's of marketing and also strategize marketing mix CO5: Acquire knowledge of 7P's of service marketing mix.	
Syllabus:	Hours
Module No.1: INTRODUCTION TO MARKETING	10
Meaning and Definition, Concepts of Marketing, Approaches to Marketing, Functions of Marketing. Recent trends in Marketing- E- business, Tele-marketing, M-Business, Green Marketing, Relationship Marketing, Concept Marketing, Digital Marketing, social media marketing and E-tailing (Meaning only).	
Module No.2: MARKETING ENVIRONMENT	10
Micro Environment- The company, suppliers, marketing intermediaries competitors, public and customers; Macro Environment- Demographic, Economic, Natural, Technological, Political, Legal, Socio-Cultural Environment.	
Module No. 3: MARKET SEGMENTATION AND CONSUMER BEHAVIOUR	10
Meaning and Definition, Bases of Market Segmentation, Requisites of Sound Market Segmentation; Consumer Behavior-Factors influencing Consumer Behavior; Buying Decision Process.	
Module No.4: MARKETING MIX	20
Meaning, Elements of Marketing Mix (Four P's)- Product, Price, Place, Promotion. Product- Product Mix, Product Line, Product Lifecycle, New Product Development, Reasons for Failure of New Product, Branding, Packing and Packaging, Labeling (Concepts only) Pricing- Objectives, Factors influencing Pricing Policy, Methods of Pricing; Physical Distribution- Meaning, Factors affecting Channel Selection (Concepts only) . Promotion- Meaning and Significance of Promotion, Personal Selling and Advertising (Meaning Only)	
Module No.5: SERVICES MARKETING	06
Meaning and definition of services, difference between goods and services, features of services, seven P's of services marketing (concept only).	
Skill Developments Activities: 1. Two cases on the above syllabus should be analyzed and recorded in the skill development 2. Design a logo and tagline for a product of your choice 3. Develop an advertisement copy for a product. 4. Prepare a chart for distribution network for different products.	

TextBooks:

1. PhilipKotler,MarketingManagement,PrenticeHall.
2. Lovelock Christopher,Services Marketing:People, Technology, Strategy, PHI
3. WilliamJ.Stanton,MichaelJ.Etzel,BruceJWalker,FundamentalsofMarketing,McGrawHillEducation.
4. BoseBiplab,MarketingManagement,HimalayaPublishers.
5. J.C.Gandhi,MarketingManagement,TataMcGrawHill.
6. RameshandJayantiPrasad:MarketingManagement,I.K.International
7. Sontakki,MarketingManagement,KalyaniPublishers.
8. PNReddyandAppanniah,MarketingManagement

Note:Latesteditionoftextbooks maybeused.

Course Articulation Matrix - 214131

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	-	2	2	1	1	2	2	1	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	3	2	2	2	1	2	2	3	1	2
CO4	3	2	3	2	2	1	1	1	2	2	2	2
CO5	2	2	2	1	1	2	2	2	2	2	1	2
WA	2.2	1.8	2.2	1.75	1.8	1.8	1.4	1.6	2.0	2.2	1.4	2

Semester I

Course Code: 211138	Course Title: DSC 2: Contemporary Indian Economy
Course Credit (L:T:P): 3 (3:0:0)	Teaching Hours/Week: 3 Hours
Total Contact Hours: 42 Hours	Formative Assessment Marks: 40
Duration of Exam: 2½ Hours	Summative Assessment Marks: 60

Course Outcomes (COs):

CO1. Comprehend the LPG Concept and current problems of Indian Economy

CO2. Identify the factors contributing to the recent growth of the Indian Economy

CO3. Analyze the sector specific policies adopted for achieving the rational goals & Review various economic policies adopted by Govt. Authorities.

Content of Course 1	42 Hrs
Unit – 1 LPG POLICIES, ECONOMIC REFORMS AND AGRICULTURE:	14
Chapter No. 1 Recent Issues: Concept of LPG India's population policy Demographic Dividend	4
Chapter No. 2 Urbanization and governance: Urbanization and Smart City Mission Impact of COVID-19 Pandemic Atma Nirbhara Bharat Abhiyan	4
Chapter No. 3 Economic Reforms and Agriculture: Commercialization and Diversification of Agriculture Public Distribution System :TPDS Doubling Farm Incomes -MGNREGS (brief introduction)	6
Practicum 1. Mini-project to ascertain the impact of pandemic on lives of different sections of population 2. Field visits to understand the agrarian situation	

Unit – 2 INDUSTRY, BUSINESS, FISCAL POLICY:	14
Chapter No. 4. Industrial Policy:	4
New Industrial Policy and Changes	
Public Sector Reforms	
Privatisation and Disinvestment	
Chapter No. 5. Business:	5
Ease of Doing Business	
Performance of MSMEs	
Role of MNC's in Industrial Development	
Chapter No. 6. Fiscal Policy:	5
Tax, Expenditure, Budgetary Deficits	
GST (meaning and features), Fiscal Federalism and Fiscal Consolidation (in brief)	
Recommendations of the Current Finance Commission	
Practicum: Mini-projects to assess the business climate	
Unit – 3 MONETARY POLICY, FOREIGN TRADE AND INVESTMENT:	14
Chapter No. 7 Monetary Policy:	5
Organisation of India's Money Market	
Financial Sector Reforms	
Chapter No. 8. Money and Capital Markets	5
Working of SEBI in India	
Changing roles of the Reserve Bank of India	
Foreign Banks and Non-Banking Financial Institutions	
Demonetization and its impact	
Chapter No. 9. Foreign Trade and Investment:	4
Direction of India's foreign trade	
Balance of payments since 1991 (trends)	
FDI – Trends and Patterns	
New EXIM policy	
Bilateral and Multilateral Trade Agreements (in brief)	
Practicum:	
1. Computation and analysis of Wholesale Price Index, Consumer Price Index:	
2. Group Discussions on India's trade policies and trade agreements	

References:

1. Bardhan, P.K. (9th Edition) (1999), The Political Economy of Development in India, Oxford University Press, New Delhi.
2. Bhaduri Amit, (2015), A Model of Development By Dispossession, Fourth Foundation
3. Byres Terence J. (ed.), (1998), The State, Development Planning and Liberalisation in India, Delhi, OUP
4. Dutt Ruddar and K.P.M Sundaram (2001): Indian Economy, S Chand & Co. Ltd. New Delhi.
5. Frankel Francine R., (2004), India's Political Economy, Delhi. OUP Jenkins Rob, 2000, Economic Reform in India, Cambridge, CUP
6. Jalan, B. (1996), India's Economic Policy- Preparing for the Twenty First Century, Viking, New Delhi.
7. Joshi Vijaya and L.M.D. Little, (1998), India's Economic Reform 1991-2001, Delhi, OUP.
8. Kapila Uma: Indian Economy: Policies and Performances, Academic Foundation
9. Mishra S.K & V.K Puri (2001) "Indian Economy and –Its development experience", Himalaya Publishing House.
10. Mukharji Rahul (ed.) (2007), India's Economic Transition: The Politics of Reforms, edited by Rahul Mukherji, Oxford University Press, New Delhi.

WEBLINKS

- https://en.wikipedia.org/wiki/Smart_Cities_Mission
- <https://prepp.in/news/e-492-new-industrial-policy-1991-indian-economy-notes>
- https://en.wikipedia.org/wiki/Foreign_trade_of_India
- <https://tavaga.com/tavagapedia/sebi>
- <https://entri.app/blog/role-of-rbi-in-indian-banking-system>
- <https://www.drishhtilas.com/daily-updates/daily-news-editorials/a-new-foreign-trade-policy-for-india>
- <https://www.jagranjosh.com/general-knowledge/population-policies-of-india-1448689756-1>

Course Articulation Matrix-211138

PO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO's												
CO1	2	3	3	3	2	2	2	2	1	1	-	2
CO2	2	2	2	3	2	1	2	1	1	1	1	1
CO3	1	1	1	2	1	-	2	1	1	1	1	1
Weighted Average	1.6	2	2	2.6	1.6	1.5	2	1.3	1	1	1	1.3

Course Code: 211237	Course Title: DSC 3: Basic Economics - II
Course Credit (L:T:P): 3 (3:0:0)	Teaching Hours/Week: 3 Hours
Total Contact Hours: 42 Hours	Formative Assessment Marks: 40
Duration of Exam: $2\frac{1}{2}$ Hours	Summative Assessment Marks: 60

Course Outcomes (COs):

- CO1** Examine the operation of the overall economic system; Calculate national income and related aggregates
- CO2** Evaluate the macroeconomic policies for solving major problems like poverty and unemployment
- CO3** Analyze the relationship between macroeconomic aggregates and the nature of business cycles and policies towards controlling them;

Unit	Description	42 Hrs
I	Macro Economic Concepts and Relationships:	12
	Chapter-1: Macro Economy; Introduction to National Income Accounting Concepts of GDP, GNP and National Income Approaches to calculating GDP, Personal Income, Nominal and Real GDP Limitations of the GDP Concept	5
	Chapter-2: Monetary Economy Characteristics of Money The Demand for Money The Supply of Money and Overall Liquidity Position Credit Creation	4
	Chapter-3: Inflation Meaning and Causes of Inflation Calculating Inflation Rate Impact of Inflation Practicum: 1. Understanding the relationships between various NI concepts used in India's NI accounting; 2. Estimating the components of money supply and interpreting the various price indices.	3

II	Macroeconomic Challenges and Policies: Chapter-4: Macroeconomic Challenges: BusinessCycles EconomicGrowth Chapter-5: Monetary Policy: Objectives Instruments Chapter-6: Fiscal Policy: Public Finance vs. PrivateFinance Fiscal policy - Role of Government: Allocation, Distribution and Stabilization Practicum: 1. Reviewing the Monetary Policy ofRBI; .A project to identify the nature and causes of poverty and the latest central budget	12 3 3 6
III	Public Policy and Globalization:	18
	Chapter 7: Poverty and Public Policy: Meaning, Types and Measurement ofPoverty Poverty Alleviation Strategies inIndia Chapter 8: International Trade: The Economic basis for trade—Absolute Advantage and ComparativeAdvantage. Terms of Trade: Meaning andTypes Exchange Rates: Meaning, Types andDeterminants Trade Barriers: Tariffs, Subsidies and Quotas Balance of Payments: The Current and CapitalAccount Chapter9: Globalization: Meaning Importance Pros and cons ofGlobalization ; Survey on identification of poor; Calculating the components of BoP of India	6 9 3
References 1. Cohen, A.J. (2020). <i>Macroeconomics for Life: Smart Choices for All? + MyLab Economics with Pearson eText</i> (updated 2 nd ed.). Toronto, ON: Pearson Canada Inc. Type: Textbook: ISBN: 9780136716532 2. Cohen, A.J. (2015). <i>Microeconomics for Life: Smart Choices for You + MyLab Economics with Pearson eText</i> (2 nd ed.). Toronto, ON: Pearson CanadaInc. 3. Type: Textbook: ISBN: 9780133899368 4. Case Karl E. and Fair Ray C. Principles of Economics, Pearson EducationAsia,2014. 5. Mankiw N. Gregory. Principles of Economics,Thomson,2013. 6. Stiglitz J.E. and Walsh C.E. Principles of Economics, W.W. Norton & Co, NewYork,2011.		

Web links:

- <https://www.khanacademy.org/economics-finance-domain/macroeconomics>
- <https://www.economicdiscussion.net/national-income/4-main-concepts-of-national-income/17241>
- <https://www.investopedia.com/terms/i/inflation.asp>
- <https://www.investopedia.com/ask/answers/100314/whats-difference-between-monetary-policy-and-fiscal-policy.asp>
- <https://education.nationalgeographic.org/resource/effects-economic-globalization>

Course Articulation Matrix-211237

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO's												
CO1	3	2	2	2	2	1	1	1	2	1	-	1
CO2	2	1	1	1	1	1	2	1	1	1	1	1
CO3	1	2	2	2	1	1	1	1	1	1	1	1
Weighted Average	2	1.6	1.6	1.6	1.3	1	1.3	1	1.3	1	1	1

Course Code: 211238	Course Title: DSC 4: Karnataka Economy
Course Credit (L:T:P): 3 (3:0:0)	Teaching Hours/Week: 3 Hours
Total Contact Hours: 12 Hours	Formative Assessment Marks: 40
Duration of Exam: 2 $\frac{1}{2}$ Hours	Summative Assessment Marks: 60

Course Outcomes (COs):

- CO1** Identify the nature of economic growth and problems of Karnataka state.
- CO2** Examine the process of structural growth in Karnataka Economy
- CO3**
Evaluate the policies and programs undertaken by the Govt. of Karnataka for bringing about socio-economic development

Units	Description	Hours
I	Characteristics of Karnataka Economy:	12
	Chapter-1: State Income State Domestic Product and PCI Measures to redress economic inequality.	2
	Chapter-2: Human and Natural Resources Population Human Development Index Poverty and Unemployment Anti-Poverty and Employment generation Programmes	6
	Functioning of Panchayat Raj Institutions Chapter-3: Natural Resources in Karnataka: Land, Water, Forest and Mineral Resources in Karnataka Sustainable Development Goals in Karnataka Karnataka Environmental Policy Practicum: conduct field visit to Forest/Reservoir/Mining and prepare thereport	4
II	Agriculture and Industries in Karnataka	18
	Chapter-4: Agriculture in Karnataka: Importance of Agriculture Problems in Agriculture Land Reforms Cropping Pattern Irrigation Watershed Development Programme Dry Land Farming Farmers Suicide Causes And Solutions	5

	<p>Chapter-5: Rural Development: Regional Imbalance: Prof. D. M. Nanjundappa Public Distribution System Rural Development Programs</p> <p>Chapter 6: Industrial Development in Karnataka: Major Industries in Karnataka - Problems and Prospects MSMEs - Problems and Measures IT Industries in Karnataka Industrial Finance in Karnataka Industrial Policy of Karnataka</p> <p>Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report</p>	9 4
III	Infrastructure and Finances:	12
	<p>Chapter 7: Economic Infrastructure in Karnataka: Transportation: Road, Rail, Water and Air Transport Information and Communication Technology Facilities</p> <p>Chapter 8: Social Infrastructure: Drinking Water, Sanitation Housing, Health and Education Health and Education, Rural Electrification</p> <p>Chapter 9: State Finance: Sources of Revenue: Direct and Indirect Taxes GST: Impact of GST State Expenditure State Indebtedness State Finance Commission Current State Budget</p> <p>Practicum: Discussion on State budget</p>	3 6

References:

1. Government of Karnataka, Economic Survey [Various Issues]
2. Planning Department, Annual Publication, Government of Karnataka.
3. Karnataka at Glance, Annual Publication Government of Karnataka.
4. Madaiah M & Ramapriya. Karnataka Economy Growth: Issues and Development, Himalaya Pub., House, New Delhi.
5. Adul Aziz and K.G. Vasanti. (Eds) Karnataka Economy.
6. Government District Development Reports
7. Hanumantha Rao. Regional Disparities and Development in Karnataka.
8. Krishnaiah Gowda H.R. Karnataka Economy, Spandana Publications, Bangalore
9. Nanjundappa D.M. Some Aspects of Karnataka Economy.
10. Puttaswamiah K. Karnataka Economy, Two Volumes

WEB LINKS:

- https://en.wikipedia.org/wiki/Economy_of_Karnataka
- <https://planning.karnataka.gov.in/storage/pdf-files/Economic%20Survey/Chapter%20Eng%202021.pdf>
- <https://www.britannica.com/place/Karnataka-state-India/Economy>

Course Articulation Matrix - 211238

PO's CO's	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	2	2	2	2	1	1	1	1
CO2	2	2	2	2	2	1	1	1	1	1	-	1
CO3	1	1	1	1	1	1	2	1	1	1	1	1
Wtd. Avg.	1.6	2	2	2	1.6	1.3	1.6	1.3	1	1	1	1

Course Code: 214229	Course Title: Financial Accounting and Reporting
Course Credit (L:T:P):4 (4:0:0)	Teaching Hours/Week:4
Total Contact Hours:56	Formative Assessment Marks: 40
Duration of Exam: 2 ½ Hours	Semester End Examination Marks: 60
Pedagogy: Classroomslecture,tutorials,andProblemSolving.	
CourseOutcomes:Onsuccessfulcompletionofthecourse,theStudents will; CO1: Analyze andpreparefinalaccountsofpartnershipfirms CO2: Acquire knowledge about theprocessofpublicissueofsharesandaccounting forthesame CO3: Construct finalaccountsofjointstockcompanies. CO4: Analyze andevaluateverticalandhorizontalanalysisoffinancialstatements CO5: Analyze, interpret and understandcompany'sannualreports.	
Syllabus:	Hours
ModuleNo.1: FINALACCOUNTSOFPARTNERSHIPFIRM	10
Meaning of Partnership Firm, Partnership deed-clauses in partnership deed, Preparation ofFinal accounts of partnership firm-Trading and Profit and Loss Account, Profit and LossAppropriationAccount,PartnerscapitalaccountandBalancesheet.Goodwill-Nature,Factorsinfluencinggoodwillandmethodsofvaluationofgoodwill(Averageandsuperprofit methods)	
ModuleNo.2:ISSUEOFSHARES	12
Meaning of Share, Types of Shares – Preference shares and Equity shares – Issue of Shares atpar, at Premium, at Discount: Forfeiture and Re-issue of Shares (Theory only), Pro-Rata Allotment; Journal Entries relating to issue of shares;Preparationofrespectiveledgeraccounts;PreparationofBalanceSheetintheVerticalform (PracticalProblems).	
ModuleNo. 3: FINALACCOUNTSOFJOINTSTOCK COMPANIES	12
Statutory Provisions regarding preparation of Company Final Accounts – Treatment of Special Items,ManagerialRemuneration,Taxdeductedatsource,AdvancepaymentofTax,ProvisionforTax,Depr eciation, Interest on debentures, Dividends, Rules regarding payment of dividends, Transfer toReserves,PreparationofProfitandLossAccountandBalanceSheet(VeticalFormSchedule-III) (PracticalProblems).	
ModuleNo.4: FINANCIALSTATEMENTSANALYSIS	12
ComparativeStatements- ComparativeIncomeStatement,ComparativeBalanceSheet;CommonsizeStatements– CommonSizeIncomeStatement,CommonSizeBalanceSheet– TrendPercentages.(AnalysisandInterpretation)	
ModuleNo.5: CORPORATEFINANCIALREPORTING PRACTICES	10

Corporate Financial Reporting- meaning, types, characteristics of Corporate financial report, users of corporate financial report; Components corporate financial report– general corporate information, financial highlights, letter to the shareholders from the CEO, management's discussion and analysis; Financial Statements- balance sheet, income statement, cash flow statement, and notes to the financial statements; Auditor's report; Significant Accounting Policies; Corporate Governance Report; Corporate Social Responsibility Report (Discussion on Role and Significance of above components of corporate financial report).

Skill Developments Activities:

1. Collect financial statement of a company for five years and analyse the same using trend analysis.
2. Refer annual reports of two companies and list out the components.
3. Draft a partnership deed as per Partnership Act.
4. List out the accounting policies in annual report of the company

Text Books:

1. Stephen P. Robbins, Management, Pearson
2. Koontz and O'Donnell, Management, McGraw Hill.
3. LM Prasad, Principles of management, Sultan Chand and Sons
4. V.S. Pr Rao/Bajaj, Management process and organization, Excel Books. GH25
5. Appanniah and Reddy, Management, HPH.
6. T. Ramaswamy: Principles of Management, HPH.

Note: Latest edition of text books may be used.

Course Articulation Matrix - 214229

PO \ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	1	2	1	-	1	2	3	2	2
CO2	3	3	2	2	3	2	2	2	1	2	2	2
CO3	2	2	3	1	2	1	-	2	2	2	2	2
CO4	3	3	3	2	3	1	1	2	2	2	2	2
CO5	2	1	1	2	2	1	-	2	2	2	2	2
WA	2.6	2.4	2.2	1.6	2.4	1.2	1.5	1.8	1.8	2.2	2	2

Course Code: 212249	Course Title: DSC(2) - Data Structure using C (Theory) DSC(2) Lab - Data Structures Lab (Practical)
Course Credits (L:T:P): 06 (4:0:2)	Hours of Teaching/Week: 04 (Theory) + 04 (Practical)
Total Contact Hours: 56 Hours (Theory) 56 Hours (Practical)	Formative Assessment Marks: 40 (Theory) 25 (Practical)
Exam Duration: 2$\frac{1}{2}$ Hours (Theory) 3 Hours (Practical)	Semester End Examination Marks: 60 (Theory) 25 (Practical)

Course Outcomes (COs):

- CO 1:** Relate Data Structures with real life scenarios, design algorithms using array data structure and identify & implement effective searching-sorting algorithm for various applications.
- CO 2:** Analyze and apply the concept of stack and queues while solving real-time problems.
- CO 3:** Acquire knowledge on memory allocation & de-allocation methods and apply knowledge of linked list on various applications.
- CO 4:** Analyze and implement the concept of Binary Trees in real-world scenarios.

Course Content:

Content	Hours
UNIT - 1	
Introduction To Data Structures: Definition; Types - Primitive & Non-Primitive, Linear and Non-Linear; Operations on Data Structures, Abstract Data Type (ADT). Arrays: Various Types and their Memory Representation; 1D Array Operations - Traversing Linear Arrays; Sorting – Bubble Sort, Selection Sort, Insertion Sort, Merge Sort, Quick Sort; Searching – Sequential Search, Binary Search; Sparse Matrices – Definition, Advantage. Skill Based/ Participative/Experimental Learning – Activity to understand the various types of Data Structures.	14
UNIT - 2	
Stacks: Basic Concepts – Definition, Representation, Operations; Infix and Postfix Notations; Applications of Stack - Conversion from Infix to Postfix, Evaluation of Postfix Expression. Queues: Basic Concepts – Definition, Representation, Types of Queues – Simple Queue, Circular Queue, Double Ended Queue, Priority Queue; Operations on Simple Queue. Skill Based/ Participative/Experimental Learning – Class Level Seminar on Stack and Queue.	14

UNIT - 3	
<p>Dynamic Memory Allocation: Memory Allocation and De-Allocation Functions – malloc(), calloc(), realloc() and free(); Garbage Collection.</p> <p>Linked List: Basic Concepts Definition, Types of Linked Lists - Singly Linked List, Doubly Linked List, Circular Linked List; Representation of Linked List in Memory; Operations on Singly Linked Lists – Insertion, Deletion.</p> <p>Skill Based/ Participative/Experimental Learning – Quiz.</p>	13
UNIT - 4	
<p>Trees: Definition; Tree Terminologies – edge, node, root node, parent node, ancestors of a node, siblings, terminal & non-terminal nodes, degree of a node, level, path, depth, height.</p> <p>Binary Tree: Type of Binary Trees - Strict Binary Tree, Complete Binary Tree, Binary Search Tree; Array and Linked List Representation of Binary Tree; Traversal of Binary Tree - Preorder, Inorder and Postorder Traversal, Reconstruction of a Binary Tree when Inorder and Postorder/Preorder are given.</p> <p>Skill Based/ Participative/Experimental Learning – Group Assignment/Case Study on Tree Data Structure.</p>	15

Text Books:

1. Fundamentals of Data Structures: Ellis Horowitz, Sartaj Sahani, Computer Science Press.
2. Data Structures through C in Depth: S K Srivastava and Deepali Srivastava, BPB Publications

References:

1. Data Structures using C: Aaron M Tanenbaum, Yedidyah Langsam, Moshe J Augenstein, Pearson Publications.
2. Introduction to Data Structures in C: Ashok N Kamathane, Pearson Publications.
3. Data Structures using C – 1000 Problems and Solutions: Sudipta Mukherjee, Tata McGraw Hill Publications.
4. <https://www.aminotes.com/2017/10/data-structures-study-materials.html>
5. https://www.tutorialspoint.com/data_structures_algorithms/index.htm
6. <https://www.youtube.com/c/SimplyCoding>
7. <https://www.youtube.com/watch?v=dM-LYxHnKcU>

Data Structures Lab

Part A:

Write a C Program to:

1. Demonstrate an Array Data Structure.
2. Search an element using Linear Search Technique.
3. Search an element using Binary Search Technique.
4. Sort the given list using Bubble Sort Technique.
5. Sort the given list using Selection Sort Technique.
6. Sort the given list using Insertion Sort Technique.
7. Sort the given list using Merge Sort Technique.
8. Sort the given list using Quick Sort Technique.

Part B:

Write a C Program to:

1. Demonstrate Stack Operations.
2. Implement Tower of Hanoi.
3. Convert an Infix Expression to Postfix Expression.
4. Demonstrate Operations of a Simple Queue.
5. Demonstrate Operations of a Circular Queue.
6. Demonstrate the use of a Dynamic Array.
7. Demonstrate Operations of a Linear Linked List.
8. Display Traversal of a Tree.

Note: Student has to execute all Programs in each part to complete the Lab Course.

Course Articulation Matrix - 212249

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	2	1	-	2	1	-	-	2	2	-	2
CO 2	3	3	2	-	2	2	-	1	2	2	-	1
CO 3	2	2	1	-	2	1	-	-	1	2	-	1
CO 4	1	3	2	1	2	2	1	1	2	2	1	2
Weighted Average	2	2.5	1.5	1	2	1.5	1	1	1.75	2	1	1.5

DSC-3C: Database Management Systems (LTP: 4:0:2) 6 Credits

Course duration: 16 weeks with 4 hours of instruction per week and 4 hours of practical per week.

Subject Code: 202316

Theory Exam: 80 Marks

Exam Duration: 3Hours (both for Theory &Practicals)

Theory IA:20 Marks

Practicals:40 Marks + 10(IA)

Course objectives

1. Provide definitions of key terms and concepts that describe the database environment and how these components interact with each other.
2. Describe data models and how they are used to capture the nature and relationships among data.
3. Identify the broad spectrum of applications and describe how business organizations are using database applications for competitive advantage.

Course Outcomes

1. Understanding database management system in an organization setup.
2. Manipulate a database using SQL

UNIT I

16hrs

Introduction to Database System Concepts and Architecture

File-based system, Database and Database management systems, Database Users, Characteristics of the Database Approach, Actors on the Scene, Advantages of Using a DBMS. 5hrs

Data Models, Schemas and Instances, DBMS Architecture and Data Independence, Database Languages and Interfaces, the Database System Environment. 4hrs

Data Modeling Using the Entity-Relationship Model

Entity Types, Entity Sets, Attributes, and Keys, Relationship Types, Relationship Sets, Roles and Structural Constraints, Weak-Entity Types, ER Diagrams, Naming Conventions and Design Aspects. 7hrs

UNIT II

16hrs

Relational Data Model, Relational Constraints, and Relational Algebra

Relational Model Concepts, Relational Model Constraints and Relational Database Schemas, Basic Relational Algebra Operations, Additional Relational Operations, Examples of Queries in Relational Algebra. 10hrs

Normalization - Functional Dependencies, Transitive and Multi-valued dependency, First Normal Form, Second Normal Form, Third Normal Form and Boyce-Codd Normal Form 6hrs

UNIT-III	16hrs
RDBMS Standards - Codd's Rules.	
SQL-The Relational Database Standards	
Data Definition, SQL Data Types and Schemas, Constraints, Basic Queries in SQL., DDL, - Create, Drop, Alter. DML - Insert, Delete, and Update.	4hrs
DCL - Grant privileges. TCL - Commit, Rollback, Save-point Statements in SQL	4hrs
Set Operations, Aggregate functions, Views (Virtual Tables) in SQL.	3hrs
Joins – Inner, Outer and Self, Additional Features of SQL.	4hrs
Storage Strategies – Indices, B-Trees, Hashing.	2hrs

Unit-IV	16hrs
Transaction and Object Oriented Relational Databases	
Transaction- Transaction Concepts, States, ACID properties, Concurrent executions	4hrs
Serializability, Transaction Processing, Transaction and System Concepts,	
Properties of Transactions	4hrs
Locking Techniques for Concurrency Control, Time-stamp based schedules, Database Recovery Techniques.	4hrs
Introduction – Object-Oriented and Object Relational Databases, Logical Database, Web Databases, Distributed Databases, Data Warehouse and Data Mining.	4hrs

TEXT BOOKS

1. **Fundamentals of Database Systems** by Navathe and Elmasri –Pearson Education, Fifth Edition.
2. **Database Systems Concepts**, 3rd edition by Abraham Silberschatz, Henry Korth and S. Sudarshan McGraw Hill International Editions.
3. **Database System Concepts**, by Silberschatz, Korth and Sudarshan, 6th edition, McGraw-Hill Education, 2011.
4. **SQL: The Complete Reference** By Groff, McGraw Hill International Editions, 2000.

WEBSITE LINKS

www.beginners-sql-tutorial.com
<http://www.w3schools.in/sql>
www.tutorialspoint.com/sql/s
Database Administration for Beginners - <http://morioh.com/p/065acd2366c1>

REFERENCE BOOKS

1. Introduction to Database systems by CJ Date. Published by Addison-Wesley.
2. Principles of database systems by Ullman, Computer Science press, 1984.
3. Introduction to database systems by Bipin C.Desai, Galgotia.

HISTORY OF MODERN INDIA (1757 CE-1858 CE)

Sub.Code:201314

Exam Marks-80

Course Duration -16 Weeks

IA Marks-20

Per Week – 6 Hours (L-5: T-1)

03 Hours

Total Hours-80

UNIT – I

10 Hrs

Advent of Europeans – Portuguese – Dutch – British – French – Carnatic wars.

UNIT – II

20 Hrs

Foundation and Expansion of British Power in India – Battle of Plassey and Buxar - Robert clive – Dual Govt in Bengal – Anglo – Marata wars – Rise of Sikhs – Ranajith Singh & Anglo-Sikh wars.

UNIT - III

20 Hrs

Administrative Reforms of British's – The Regulating Act of 1773 – Pitt's India Act of 1784 – Administrative Reforms of Lord Cornwallis and Lord William Bentinck – Land Revenue Reforms – Zamindari – Ryatwari – Mahalwari System- Administrative Reforms of Lord Dalhousie.

UNIT – IV

15 Hrs

Renaissance of 19th Century India - Rajaram Mohan Roy – Dayananda Saraswathi – Ramakrishna Mission – Aligarh Movement.

UNIT – V

15 Hrs

The Revolt of 1857 –Nature, Causes and Result of the Revolt – Proclamation of Queen Victoria -1858.

HISTORICAL MAPS:

- 1) Presidency States of British Empire.
- 2) Sikh Empire under Ranajith Singh.
- 3) Historical Locations of Carnatic Wars.
- 4) British Empire Its Zenith of 1857.

PLACES OF HISTORICAL IMPORTANCE:

- (1) Plassey (2) Buxar (3) Thiruchanapalli (4) Arcot (5) Wandiwash
(6) Bombay (7) Calcutta (8) Madras (9) Jhansi (10) Hoogly (11) Gwalior
(12) Machalipatnam (13) Bessin (14) Salsatte (15) Nagpur (16) Lahore
(17) Delhi (18) Aligarh (19) Barakpura (20) Calicut.

BOOKS FOR STUDY & REFERENCE

- 1) Bipin Chandra - *Nationalism and Colonialism in India – Oriental Longman Hyderabad – 1979.*
- 2) Arthar D Innes - *History of British in India – Lal pub, New Delhi, 1999.*
- 3) Roy Choudhari S.S – *Social, Cultural and Economic History of India (Modern times) Surjeet Pub., Delhi, 1984, Vol. 3.*
- 4) R.C.Majumdar (Ed.) - *British Paramountacy and Indian Renaissance – Bharatiya Vidya Bhavan, Bombay, 1969.*
- 5) Ranajith Guha : *Subaltern Studies, 10 Volumes*
- 6) B.H.Grover and S.Grover : *A New look at on Modern Indian History (New Delhi, 2003.*
- 7) V.D.Mahajan – *History of Modern India.*
- 8) Chandrashekarappa – *Adhunika Bharatada Ithihaasa (KAN)*
- 9) Lokappa Gowda – *Adhunika Bharatada Ithihasa (KAN)*
- 10) Prof. Bipin Chandra- *Adhunika Bharatada Ithihaasa, Navakarnataka Publication, Bengaluru, 2017(KAN)*
- 11) D.T.Joshi- *Adhunika Bharatada Ithihaasa Vidyavidhi Publication, Gadaga, 2011. (KAN)*
- 12) Dr. K.Sadashiva – *Adhunika Bharatada Ethihasa. (KAN)*
- 13) Lakshmi Subramanyam *History of India-1707-1857, Blackman, Publication*
- 14) <https://dceclirsp.weebly.com>
- 15) <https://ndl.iitkgp.ac.in>

Fundamentals of Macro Economic Theory

Choice Based Credit System [CBCS]

Subject Code: 201315

Teaching Hours: L: 5 + T:2 = 7 Hours per week, 6 Credits (Total no. of Working Hours – 80)

Course objectives: This paper aims to introduce the students to the basic concepts of Macroeconomics, which deals with the aggregate economy. It deals with preliminary concepts associated with the determination and measurement of aggregate macroeconomic variables like Income, Employment, savings, investment and other related aspects.

Course / Learning outcomes:

Students will

- Understand as to how macroeconomic concepts can be applied to analyze the real-life situations.
- Analyse the macroeconomic performance of various countries using formal analytical tools. It also allows them to evaluate important macroeconomic policies and their implications.
- The course will also be useful for students aiming towards careers in the Government sector, Policy Analysis, Business, Journalism and International Organizations.

Module-1:

Introduction to Macroeconomics and National Income Accounting - 16 hours

Macroeconomics: Meaning, Scope and Types - Basic Concepts of Macroeconomics: Stocks, Flow and Equilibrium. Uses and Limitations.

National Income: Meaning and Definitions, Concepts: GDP, GNP, NDP, NNP, NI, PI, DPI and PCI - GDP Deflator, Methods of Measuring National Income, Difficulties in the Measurement of National Income.

Module-2: Classical Theory of Employment - 14 hours

Assumptions of Classical Theory - Say's Law of Market, Classical Remedy to Unemployment Problem: Wage - Price Flexibility, (Pigou's Version) Savings and Investment Equality, Keynesian Criticisms to Classical Theory of Employment.

Module-3: Keynesian Theory of Employment**- 20 hours**

Concept of Effective Demand and its Determinants - Equilibrium Level of Income and Employment. Consumption Function: Meaning and Illustration, Properties of Consumption Function, Psychological Law of Consumption, Factors Affecting Consumption Function. Investment Function: Meaning and Types, MEC and Rate of Interest, Factors Affecting Investment Function. Concept of Multiplier - Evaluation of the Keynesian Theory of Employment.

Module-4: Inflation, Deflation and Business Cycles**- 16 hours**

Concept of Inflation; Determinants of inflation, Relationship between inflation and unemployment: Phillips Curve - Inflationary Gap and Deflationary Gap.

Business Cycles: Meaning, Types and Phases of Business Cycle, Measures to Control Business Cycles.

Module-5: Macroeconomic Policy and New Classical Macroeconomics**- 14 hours**

Monetary Policy: Objectives and Instruments - Fiscal Policy: Objectives and Instruments, New Classical Macroeconomics - Supply Side Economics, Rational Expectations and Laffer curve.

Books for Reading

1. Ahuja, H. I. *Macroeconomics (Theory & Policy)*. S. Chand & Company, New Delhi
2. Jhingan M. L. *Macroeconomic Theory*, 11th Edition.
3. Mithani.D.M. *Modern Economic Analysis*, Himalaya Publishing House, Mumbai.
4. Mukherjee Sampat. *Modern Economic Theory*, New Age International Publishers, New Delhi.

Books for References

5. Samuelson.P.A. 18th Edition, *Economics*, Tata McGraw- Hill Publishing Com., Limited, New Delhi.
6. Seth M. L. *Macroeconomics*, L N Agarwal Educational Publishers, Agra, India
7. Vaish. M.C. *Macroeconomic Theory*, Wishwa Prakashan, New Delhi.

Web links and video content

wikipedia.org/wiki/Macroeconomics

www.investopedia.com/terms/m/macroeconomics.asp

<https://study.com/academy/lesson/national-income-accounting-in-economics>

<https://cleartax.in/s/inflation-deflation>

<https://www.investopedia.com/ask/what-difference-between-inflation-and-deflation.asp>

DSC-8:Data Communication and Computer Networks(L:T:P::4:2:0)6 Credits.
contact hours: 64 Hours

Objectives:

To understand the basic concepts of Networking, Detailed study of OSI Model, error detection methods and congestion control Algorithms.

Outcomes:

Students get themselves exposed to the basics of Networking concepts, understand various functions of OSI Layers and error detection methods.

Unit I

18 Hrs

Introduction to Computer Network- Data Communication, Component and Basic Concepts –

- Introduction
- Characteristics – Delivery, Accuracy, Timeliness and Jitter
- Components – Message, Sender, Receiver, Transmission medium and protocol

Topology – Mesh, Star, Tree, Bus, Ring and Hybrid Topologies

Transmission modes – Simplex, Half Duplex, Full Duplex

Categories of Networks – LAN, MAN, WAN

Base Band & Broad Band Transmissi, Guided- Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable and Unguided Media- Radio Wave Transmission Systems, Microwave Transmission Systems, Infrared Transmission Systems and Satellite Communication System.

Overview of Data & Signal Bits. Baud & Bit Rate. Modulation (AM, PM, FM), Multiplexing (TDM, FDM, STDM).

Unit II

17 Hr

Digital To Analog – ASK, PSK, FSK, QPSK. Transmission methods – Synchronous & Asynchronous, Flow Control, Error Control, Error Detection methods. Goals of Layered protocols- Introduction to OSI, TCP/IP

Unit III

15 Hr

HDLC- frame format, station, states, configuration, access control. LAN Topology - Ethernet (IEEE 802.3), Token Bus (IEEE 802.4), Token Ring (IEEE 802.5) Switching Technologies – Circuit, Message, and Packet. X.25, X.21, RS-232 C – frame format, channel, packet frames, and facilities.

Unit IV

14 Hrs

ISDN- D channel, B-Channel, International Standards, NT1, NT2, TA, TE Devices. Bridging and Routing. Congestion Control – Leaky Bucket & Token Bucket Algorithms. Introduction to data security (private key, public key)

Text Books:

1. Fourauzan B., “Data Communications and Networking”, 3rd edition, TataMcGrawHillPublications, 2004, ISBN 0 – 07 – 058408 – 7.
2. Tanenbaum A., “Computer Networks”, 4th Edition, PHI, ISBN 81 – 203 – 2175 – 8

Reference Books:

1. Keshav S., “An Engineering Approach to Computer Networking”, PearsonEducation, ISBN 981 – 235 – 986 – 9
2. Comer D., “Computer Networks and Internet”, 2ND Edition, PearsonEducation, ISBN 81– 7808 – 086 – 9
3. S.K.Basandra & S. Jaiswal, “Local Area Networks”, Galgotia Publications
4. William Stallings, “Data and Computer Communication”

Web links and video contents:

1. https://www.tutorialspoint.com/data_communication_computer_network/index.htm
2. <http://www.nptelvideos.in/2012/11/data-communication.html>

INDIAN NATIONAL MOVEMENT (1858 CE-1947 CE)

Sub. Code: 201414

Exam Marks-80

Course Duration -16 Weeks

IA Marks-20

Per Week – 6 Hours (L-5: T-1)

03 Hours

Total Hours-80

UNIT – I

20 Hrs

Introduction - Rise and Growth of Nationalism - Growth of Modern Political Ideas- Foundation of Indian National Congress – Moderates and their contributions – Gokhale – Dada Bai Naoroji and Drain theory – S.N.Banerjee - Partition of Bengal (1905), Split of Surat (1907), Rise of Extremist – Balagangadhara Tilak – Lala Lajpat Roy – Bipin Chandrapal.

UNIT – II

20 Hrs

Minto-Morley Reforms (1909)- Nationalism during First world War – Lucknow Pact (1916) – Home Rule Movement (1916) and Annie besant - Rowlat Act & Jallian Walabagh Tragedy (1919) – Montegue Chelmesford Act of 1919.

UNIT – III

15 Hrs

The Age Gandhi - Non Cooperation Movement – Simon Commission (1927) – Dandimarch (1930) – Round Table Conferences and Dr. B.R.Ambedkar – Government of India Act of 1935.

UNIT – IV

10 Hrs

Rise of Socialism and Communalism-Muslim League – Hindu Mahasabha- Two Nations Theory.

UNIT – V

15 Hrs

Rise of Revolutionary Nationalism – Bhagath Singh – Chandrashekar Azad – Subhash Chandra Bose and INA – Quit India Movement (1942) - Partition and Independence (1947).

HISTORICAL MAPS:

- 1) Partition of Bengal -1905.
- 2) Important Sathyagraha Places of Gandhiji-(1917-1948)
- 3) Important Places of Quit India Movement of 1942.
- 4) Partition of India-1947.

PLACES OF HISTORICAL IMPORTANCE 1) Bombay 2) Madras 3) Kolkata 4) Dandi 5) Dhaka 6) Lahore 7) Poona 8) Delhi 9) Amritsar 10) Lucknow 11) Bardoli 12) Karachi 13) Kanpura 14) Gwalior 15) Surat 16) Belgaum 17) Noukhali 18) Cuttack 19) Allahabad 20) Karawara.

BOOKS FOR STUDY & REFERENCES

1. *Tarachand History of Freedom Movement in India 4 Volumes, New Delhi, 1984*
2. *Grover and Grover – A New look on Modern Indian History*
3. *Bipan Chandra – India's Struggle for Independence*
4. *Anil Seal – The Emergence of Indian Nationalism*
5. *Sumith Sarkar – Modern India (1885-1947)*
6. *L.P.Sharma – Indian National Movement*
7. *Phalaksha – History of Modern Period Vol. 3, Shasi Prakashana Publication – 2010*
8. *V.D. Mahajan- Modern Indian History – S.Chand Publication, 2009*
9. *Babu Krishnamurthy – Bharatada Swatantrya Sangrama – Samudyaa Sahitya Pub., 2007(KAN)*
10. *Bipan Chandra, Amalesh Tripathi and Barunday – Swatantrya Horata, National Book Trust India Publication, 2013.(KAN)*
11. *Dr. S.Narendra Prasad, Prof. R.Parameshwara, Prof. N.Mahadevaswamy – Bharatada Swatantrya Chaluvali, Chetana Book House Publication, Mysore 2001, (KAN)*
12. *Dr. K.Sadashiva- Bharatada Swatantrya Chaluvali (KAN)*
13. *Prof. C.N.Lokappa Gowda- Bharatada Swatantrya Chaluvali (KAN)*
14. *KNA – Bharatada Swatantrya Chaluvali (KAN)*
15. *N P Shankaranarayana Rao- Swatantrya Gangeya Saavira Thoregalu.*
16. <https://dceclirsp.weebly.com>

DSC-3D: Object Oriented Programming Using JAVA (LTP: 4:0:2) 6 Credits

Course duration: 16 weeks with 4 hours of instruction per week and 4 hours of practical per week.

Subject Code: 202416

Theory Exam: 80 Marks

Exam Duration: 3Hours (both for Theory &Practicals)

Theory IA:20 Marks

Practicals:40 Marks + 10(IA)

Course objectives

Introduction to Object Oriented Programming

To develop problem solving skills using JAVA for real world Applications

Course Outcome

To write and implement JAVA programs and to develop small Applications using JAVA

To use JAVA programming language for various programming Technologies

Unit - I

16hrs

Introduction to JAVA

JAVA Evolution: JAVA History, JAVA Features, How JAVA Differs from C, JAVA and Internet, Hardware and Software Requirements, JAVA Support Systems, JAVA Environment. **3hrs**

Overview of JAVA Language: Introduction, Command Line Arguments, Programming Style, Program Structure, More of JAVA Statements, Simple JAVA program, Implementing a JAVA Program, JAVA Virtual Machine (JVM). **3hrs**

Constants, Variables, and Data Types: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Values to Variables, Scope of Variables, Symbolic Constants, Type Casting, Getting Values of Variables, Standard Default Values. **2hrs**

Operators and Expressions: Introduction, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operators, Bitwise Operators, Special Operators, Precedence of Arithmetic Operators, Arithmetic Expressions, Mathematical Functions. **2hrs**

Decision Making and Branching: Introduction, Simple if Statement, the if.....else Statement, Nesting of if...else Statements, the else-if Ladder, the Switch Statement. **3hrs**

Decision Making and Looping: Introduction, while Statement, do Statement, for Statement. **3hrs**

Unit -II

16hrs

Classes, Arrays, Strings, Vectors, Inheritance and Interfaces

Classes, Objects and Methods: Introduction, Defining a Class, Adding Variables, Adding Methods, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods. **6hrs**

Arrays, Strings and Vectors: Arrays, One-dimensional Arrays, Creating and 1D-Array, Two-Dimensional Arrays, Creating an 2D-Array, Strings, Vectors and Wrapper Classes. **3hrs**

Inheritance: Introduction and its types, Extending a Class, Overriding Methods, Final Variables and Methods, Finalize methods. Abstract Methods and Classes, Visibility Control. **4hrs**

Interfaces: Introduction, Multiple Inheritance, Defining Interfaces, Implementing Interfaces, Accessing Interface Variables. **3hrs**

Unit - III

16hrs

Packages, Multithreading and Exception Handling

Packages: Putting Classes together- Introduction, JAVA API Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes. **6hrs**

Multithreaded Programming: Introduction, Creating Threads, Extending the Thread Class, Life Cycle of a thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface. **6hrs**

Managing Errors and Exceptions: Introduction, Types of Exception Handling Code, Multiple Catch Statements, Using Finally Statement. **4hrs**

Unit - IV

16hrs

IO Streams and Applets

Managing Input/Output Files in JAVA: Introduction, Concept of Streams, Stream Classes, Byte Stream Classes, Character Stream Classes, Using Streams, Other Useful I/O Classes, Using the File Class, Input / Output Exceptions, Creation of Files, Reading / Writing Characters, Reading / Writing Bytes, Handling Primitive Data Types, Concatenating and Buffering Files. **7hrs**

Applets: Applet Programming, Graphics Programming, Input/Output: Introduction, How Applets Differ from Applications, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an Executable applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, running the Applet, Displaying Numerical Values, Getting Input from the User. **7hrs**

Graphics Programming: Introduction, The Graphics Class, Lines and rectangles, circles, and Ellipses, Drawing Arcs, Drawing Polygons. **2hrs**

TEXT BOOKS

1. Programming with JAVA by A. Balaguruswamy, A Primer, TMH, 1999.
2. JAVA 2: The Complete Reference by Patrick Naughton & Herbert Schildt, , THM, 1999.
3. JAVA - A Beginners guide,8th edition by Herbert Schildt : McGraw Hill Professional, 09-Nov-2018.

WEBSITE LINKS

<http://tutorialpoint.com/java>

<http://www.w3schools.in/java-tutorial>

<http://www.programmingtutorials.com/java.aspx>

REFERENCE BOOKS

1. Rajan Manro, “Programming in JAVA”, Kalyani Publications
2. Thomas Boutel, “CGI programming in C and Perl”, Addison – Wesley, 1996.
3. Jefry Dwight et al, Using CGI, Second Edition, Prentice Hall, India, 1997.
5. Schildt, “JAVA The Complete Reference”, 7th Edition.

COMPUTER MAINTENANCE & OFFICE AUTOMATION TOOLS

V Semester SEC - 5C (L:T:P :: 1:0:1) 2 Credits

(Course Duration: 16 Weeks with 1 Hour of Instruction per Week and 2 Hours of Practicals per Week)

Subject Code: 212556
Theory Exam: 40 Marks
Theory IA: 10 Marks
Practical Exam: 40 Marks
Practical IA: 10 Marks

Teaching Hours: 16

Exam Duration
Theory - 2 Hours
Practicals - 3 Hours

Course Objectives

This course covers the handling of whole field of Word Processing, Spreadsheets and Presentation along with, the basics of how to maintain and Solve Issues of a Computer. It enables people with lower skill level to perform higher skill level tasks.

Course/Learning Outcomes

Students will be able to

- Efficiently use Word Processors, Spreadsheets and Presentation Software
- Install Operating System on a PC/Laptop
- Solve issues related to Computer and Software Shutdowns
- Troubleshoot basic Network Issues
- Troubleshoot issues related to Externally Connected Devices like Printer/Scanner

UNIT-1

16 Hours

Introduction to Computer Maintenance: Operating System – Definition, Role & Functions, Troubleshooting; Concept of Windows, Icons & Menus – create, find, copy move, delete, rename; File Extension; Networking – introduction, types of networking, Troubleshooting; Definition of NIC, Bridges, Gateway, Routers; Malicious Software – introduction, types.

Word Processing, Spreadsheet and Presentations

Word Processing – Document Option - create, open, close, save, print, export, exit; Page Formatting - margins, orientation, size, layout settings, page background, header & footer, columns with its formatting options; Paragraph Formatting – indents & spacing, alignments, text flow, borders, background. Editing Options - cut, copy, paste, paste special, find & replace. Character/Text Formatting – font styles, typeface, font size, font effects (color, effects, underline, overline, relief, strike through), font position (subscript, normal, superscript), font direction/rotation/scaling, font spacing, background. Bullets and Numbering; Text Case options; Wrap option; Arrange Elements/Components; Group option; Enable/Disable option of a Toolbar Elements. Insert - page break, paragraph break, line break, fields, special character, watermark, frame options, table with its formatting options,

formula, shapes/graphics, chart, image, sound, video; Text Artwork; Tools – spell check, mail merge, macros.

Spreadsheet – Document Option - create, open, close, save, print, export, digital signature, exit; Format Options of - page, sheet, cell, row, column, conditional formatting, merge and split options, alignment, arrange, group, flip, graphic; Editing Options - cut, copy, paste, paste special, find & replace. Character/Text Formatting – font styles, typeface; font size, font effects, font position (subscript, normal, superscript), font direction/rotation/scaling, font spacing, background, font case, font; Wrap option; Insert – cell, row, column, sheet, row break, column break, special character, formula/function, chart, image, sound, video.

Presentation - Document Option - create, open, close, save, print, export, digital signature, exit; Editing Options - cut, copy, paste, paste special, find & replace; Slide view options; Insert – slides, fields, special character, hyperlink, animated image, table with its formatting options, formula, chart, image, sound, video; Format options of – character/text, paragraph, page, bullets and numbering, font case, graphic, image, slide design, slide layout; Slide Transition; Custom Animation; Slide Show – with and without timing option.

Text Book

1. Microsoft Office 2019 Step by Step – Joan Lambert and Curtis Frye, Microsoft Press
2. A Conceptual Guide to OpenOffice.org 3 - R. Gabriel Gurley, Create Space Independent Publishing Platform
3. Operating System Concepts - by Abraham Silberschatz, Greg Gagne, and Peter Baer Galvin Publisher: Wiley
4. Data Communications and Networking - Behrouz A. Forouzan, McGraw Hill Education
5. Computer Fundamentals – Anita Goel, Pearson Publications

Books for Reference

1. Microsoft Office Bible - John Walkenbach, Herb Tyson, Faith Wempen, Cary N. Prague, Michael R. Groh, Peter G. Aitken and Lisa A. Bucki, Wiley India Pvt. Ltd.
2. Operating System – Tenenbaum, Prentice Hall
3. Computer Fundamentals - P. K. Sinha, BPB Publications
4. Computer Networking- J.F. Kurose, K.W. Ross, Pearson Publications
5. Fundamentals of Computers - V. Rajaraman, Prentice- Hall of India

Reference Web Link

https://onlinecourses.swayam2.ac.in/cec19_cs06/preview

<https://nptel.ac.in/courses/106/105/106105214/>

https://onlinecourses.swayam2.ac.in/cec20_cs05/preview

<https://mooc.office365-training.com/en/>

SYSTEM SOFTWARE AND OPERATING SYSTEMS

V Semester DSE – 5A (L:T:P :: 3:0:3) 6 Credits

(Course Duration: 16 Weeks with 3 Hours of Instruction per Week and 6 Hours of Practicals per Week)

Subject Code: 212516

Theory Exam: 80 Marks

Theory IA: 20 Marks

Practical Exam: 80 Marks

Practical IA: 20 Marks

Teaching Hours: 48

Exam Duration

Theory - 3Hours

Practicals – 4Hours

Course Objective

- To make students understand the design concepts of various system software
- To understand the basic components of a computer operating system and the interactions among the various components.

Course/Learning Outcome

A student should be able to

- Understand the fundamentals of various components of System Software.
- Describe the functions of a contemporary operating system with respect to convenience, efficiency, and the ability to evolve
- Explain the objectives and functions of modern operating systems
- Analyze the various resource management techniques

SYSTEM SOFTWARE

UNIT-1: Machine Architecture, Assembler and Loaders

16 Hours

Introduction - System software, Hypothetical Machine and its architecture, Assemblers-Introduction, General design procedure, data structure, Format of Databases, Algorithm for pass 1 and pass 2.

Loaders-General Loading schemes, compile and go loader scheme, general loader, Absolute loader (Algorithm and Flow chart), Relocating loader, Direct linking loader, overlays, Dynamic loading, Introduction to Macros.

Compilers – Functions, Phases and compilers(in Brief) - Lexical analysis, interpretation, Syntax analysis, Optimization, storage assignment, code generation, assembly and output, Lexical and syntax analysis.

OPERATING SYSTEMS

UNIT-2: Fundamentals of Operating Systems and Memory Management

16 Hours

Definition of Operating System, Need, Types- Batch Systems, Multiprogramming, Time Sharing, Real time, Unix Operating System - Introduction

Operating System functions / services, System Calls, System Programs

Process Concept: meaning of process, process state, process control block, Threads

Introduction to Memory Management, functions of memory management, Contiguous Technique, partitioned memory – single partition, multiple partition, Fragmentation

Memory management technique – Paging, Segmentation, Demand paging, Page Replacement algorithms – FIFO, LRU, Optional page replacement.

UNIT-3: Process Management & Deadlocks

16 Hours

Process scheduling – scheduling queues, schedulers, context switch.

Scheduling criteria, Scheduling algorithms: First-Come-First-Served (FCFS), Shortest Job First (SJF), Priority Scheduling, Round Robin. Real time scheduling with pre-emption and non-preemption.

Deadlocks: Definition with example, System model, Deadlock characterization – Necessary Conditions Resource Allocation Graph, Dead lock prevention, Avoidance and detection, Recovery from dead lock.

Text Book

1. System programming – John. J. Donovan.
2. System Software – Leland L. Beck, Third edition, Addison Wesley 1997.
3. Operating System Concepts, Abraham Silberschatz and Peter Baer Galvin, Fifth edition, Addison - Wesley 1989.
4. Operating System Concepts & Design, Milan Milonkovic, II Edition, McGraw Hill 1992.
5. Operating Systems, Stallings, Pearson Edition.
6. Operating System Concepts, Tanenbaum, Pearson Education.

Reference Web Link

http://gcc.gnu.org/onlinedocs/gcc-2.95.3/cpp_1.html

<https://codex.cs.yale.edu/avi/os-book/bib-dir>

<https://www.cse.iitb.ac.in/~mythili/os>

<https://courses.cs.washington.edu/courses/cse451/16au/readings/ritchieunix.pdf>

https://www.operating-system.org/betriebssystem/_english/bs-msdos.htm

<https://www.classcentral.com/course/swayam-introduction-to-operating-systems-6559>

<https://www.classcentral.com/course/swayam-operating-system-fundamentals-14217>

DISCIPLINE SPECIFIC ELECTIVE (GROUP B) (PART D)
INDIRECT TAXES-I
(Course Code: 213517)

(LTP 4:1:0) (Credit: 5)

(Hours Per Week: 06) (Total Hours: 96)

Course Objectives: The objective is to equip students with the principles and provisions of Goods and Services Tax (GST), which is, implemented from 2017 under the notion of One Nation, One Tax and One Market and to acquaint students with basic provisions of GST Law and basic working knowledge.

Course Outcome:

- Provide knowledge about GST
- Knowledge of tax related with movement of goods
- Understand the procedure of levy and collection of Tax
- Determination of the Time of Supply
- Determination of the Place of Supply

Unit-1-Introduction to GST: Indirect Tax Structure in India, Pre-GST Indirect Taxation Structure in India, Issues in Indirect Tax, Rationale for Transition to GST, GST-Meaning, Definition of GST, Types of GST, Features of GST, Benefits of GST, Problems on Computation of GST, Concept of “cascading effect”. **(15 Hours)**

Unit-2-Definitions: Actionable claim, Address of Delivery, Aggregate Turnover, Agriculturist, Associated enterprises, Business, GST Council, Capital Goods, Casual Taxable Person, Central Tax, Cess, Common Portal, Composition Levy, Composite Supply, Consideration, Credit note and Debit Note, Deemed Exports, Draw-Back, Electronic Credit Ledger, Exempt Supplies, Goods, Invoice, Input, Input Service, Input Service Distributor, Input Tax, Input tax Credit, Intra-State Supply of Goods, Inward Supply, Job Work, Manufacture, Market Value, Mixed Supply, Money, Non-Taxable Supply, Notification, Output Tax, Outward Supply, Person, Place Of Supply, Principal Supply, Proper Officer, Recipient, Registered Person, Return, Reverse Charge, Turnover Service, State Tax, Taxable Supply, Zero Rated Supply **(20 Hours)**

Unit-3- Levy and Collection of Tax: Scope of Supply, Tax Procedure relating to levy of Collection and Exemption from Tax (CGST & SGST) Levy of GST; Liability of Tax Payable Person, Rate and Value of Tax, Meaning and Conditions of Supply, List of transactions without consideration list of neither a supply of goods, nor supply of

services; meaning and treatment of mixed supply, meaning and treatment of composite supply, reverse charge mechanism, Composition Levy. **(12 Hours)**

Unit-4-The Integrated Goods and Service Tax Act,2017: Short title, extent and commencement, Definitions, Central Tax, Customs Frontier of India, Export of Goods and Services, Import of goods and Services; Location of Recipient of Service, Location of Supplier of Service, Appointment of Officers, Levy and Collection, Power to grant exemption from tax, Inter-State supply, Intra-State supply, Supplies in territorial waters. **(16 Hours)**

Unit-5-Place of supply of goods other than supply of goods imported into or exported from India, Place of supply of goods imported into, or exported from India, Place of supply of services where location of supplier and recipient is in India, Place of supply of services where location of supplier or location of recipient is outside India, Special provision for payment of tax by a supplier of online information and database access or retrieval services **(16 Hours)**

Unit-6- Time of supply-Introduction, time of supply-forward charge, reverse charge, residuary, special charges-Time of supply of service- forward charge, reverse charge, Vouchers, Residuary, Special charges. Problems on determination of time of supply **(17 Hours)**

References:

1. Taxman publications
2. Compendium on Goods and service tax-Dr. Manju S
3. www.cbec.gov.in/
4. <https://www.gst.gov.in/>
5. <https://cleartax.in/s/gst-law-goods-and-services-tax>
6. <http://www.gstcouncil.gov.in/>

HISTORY AND CULTURE OF SOUTH INDIA UPTO 1026 CE

Sub. Code- 211514

Exam Marks -80

Course Duration- 16 Weeks

IA Marks -20

Per week-6 Hours (L-5; T-1; P-0) 6 Credits

Exam Duration-03Hrs

Total Hours- 80

Course Objectives:

- To orient the students to **Imbibe History and Culture of South India**
- The empirical knowledge of **Archaeological Field Survey** will be imparted to the students.

Course/ Learning Outcomes:

- The students will be equipped with ability to take up various **Competitive Examinations**.
- The students have an opportunity to get an experience about doing field work this would lead towards **research oriented activities**.
- To develop the knowledge of ancient Karnataka history including different dynasties and their contributions.

UNIT – I

20 Hrs

Sources –Sangam age –Polity – Literature-Kadambas of Banavasi-Mayura Varma- Gangas of Talakadu-Durveenitha – Shatavahanas – GautamipuraShatakarni. .

UNIT – II

15 Hrs

Chalukyas of Badami – Pulakeshi – II Cultural Contributions – The Rashtrakutas – AmoghavarshaNrupatunga – Cultural Contributions.

UNIT – III

25 Hrs

Pallavas of Kanchi – NarasimhaVarma – I and his achievements – The Cholas of Tanjore – RajendraChola – I – RajarajaChola – I – Administration – Art and Architecture. Chalukyas of Kalyana – Vikramaditya – VI and Someshwara – III.

UNIT – IV

10 Hrs

South India- Society–Economy – Guild System- Land Grants – Brahmadeya and Devadaya.

UNIT – V

10 Hrs

South India- Bhakti Movement Alwars and Nayanars– Shankaracharya Ramanujacharya – Madhvacharya – Basaveshwara.

HISTORICAL MAPS:

- (1) Chalukya Empire under Pulakeshi II
- (2) Rashtrakuta Empire under AmoghaVarshaNrupatunga
- (3) Chola Empire under RajarajaChola – I
- (4) Pallava Empire under Narasimhavarma – I
- (5) Important Arts and Architectural Centers of South India

PLACES OF HISTORICAL IMPORTANCE:

- (1) Badami (2) Pattadakallu (3) Banavasi (4) Kanchi (5) Tanjore (6) Kalyana (7) Manyakheta (8) Kalati (9) Koodalasangama (10) Mahabalipuram (11) Aihole (12) Nasik (13) Udipi (14) Shravanabelagola (15) Peramburu (16) Talakadu (17) Somanathapura (18) Kolar (19) Uraiyur (20) Madhuri

BOOKS FOR STUDY & REFERENCE

- (1) T.V.Mahalingam : *South Indian Politics*
- (2) Dr. K.A.NeelakantaShastri – *A History of South India, Oxford University Publication, 2004.*
- (3) R.G.Bhandarkar– *History of Deccan*
- (4) Dcret J.D.M. – *The Hoysalas*
- (5) Gupta K.M. – *Land System in South India 800-1200 A.D.*
- (6) R.R.Diwakar – *Karnataka through the Ages.*
- (7) S.Mugali – *South Indian Studies, B.R., publishing, New Delhi*
- (8) M.N.Venkataramanappa – *South Indian History*
- (9) Dr. H.N.Thipperudraswamy – *Karnataka Samskruti Sameekshe, D.V.K.Murthy Publication, Mysore, 2003.(KAN)*
- (10) Prof. G.R.Rangaswamaiah & Prof. B.Sheik Ali- *Dakshina Bharatada Ithihaasa, Chetana Book House Publication, Mysore, 2001 (KAN)*

HISTORY AND CULTURE OF KARNATAKA (1026-1761 CE)

Sub. Code- 211524

Course Duration- 16 Weeks

Per week-6 Hours (L-5: T-1: P-0) 6 Credits

Total Hours- 80

Exam Marks -80

IA Marks -20

Exam Duration-03Hrs

Course Objectives:

- To orient the students to **Imbibe Karnataka History and Culture.**
- The empirical knowledge of **Archaeological Field Survey** will be imparted to the students.

Course/ Learning Outcomes:

- The students will be equipped with ability to take up various **Competitive Examinations.**
- The students have an opportunity to get an experience about doing field work, this would lead towards **research oriented activities.**
- To develop the knowledge of Medieval Karnataka History including different dynasties and their contributions.

UNIT – I

10 Hrs

Sources – Literary Sources and Archaeological Sources.

UNIT – II

25 Hrs

The Hoysala Dynasty – Vishnuvardhana – Administration – Art and Architecture-Vijayanagara Empire – Origin Theories – Sangama Dynasty – Devaraya II – Tuluva Dynasty – Krishnadevaraya – Aliya ramaraya and Battle of Talikote (1565) – Administration and Cultural Contributions.

UNIT – III

15 Hrs

Bahamani Kingdom – MohamadGawan -Conquests and Administrative Reforms – AdilShahis of Bijapura – Ibrahim AdilSha – II, Cultural Contributions of Adilshahis.

UNIT – IV

20 Hrs

Wodeyars of Mysore – Early Wodeyars – Raja Wodeyar -ChikkadevarajaWodeyar – Administration and Literature – Palegers of Karnataka- Nayakas of Keladi- Shivappanayaka – Land Revenue Reforms – Palegars of Chitradurga - MadakariNayaka–V.

UNIT – V

10 Hrs

Socio Religious Movement – Purandaradasa – Kanakadasa – Spread of Christianity and Islam- Sufism – Quaja – Bande – Nawaz.

HISTORICAL MAPS:

- (1) Hoysala Empire under Vishnuvardhana.
- (2) Vijayanagara Empire under Krishnadevaraya
- (3) Bahamani Kingdom under Gawan
- (4) Mysore State under ChikkadevarajaWodeyar

PLACES OF HISTORICAL IMPORTANCE:

- | | | |
|-----------------|-------------------|---------------|
| (1) Talikote | (2) Hampi | (13) Halebedu |
| (3) Bijapura | (4) Gulbarga | (14) Bidar |
| (5) Keladi | (6) Mysore | (15) Goa |
| (7) Kaginele | (8) Srirangapatna | |
| (9) Chitradurga | (10) Mangaluru | |
| (11) Ikkeri | (12) Belur | |

BOOKS FOR STUDY & REFERENCE

- (1) R.Ramakrishnan and H.V.Srinivasamurthy- *A History of Karnataka (New Delhi, 1978)*
- (2) R.S.Mugali- *The Heritage of Karnataka, Bengaluru, 1976.*
- (3) R.R.Diwakara- *Karnataka through the Ages, Bengaluru, 1968.*
- (4) Burton Stein, *The New Cambridge History of India, 1.2 Vijayanagara, Cambridge, 1989.*
- (5) B.A.Salatore – *Political Life in Vijayanagara Empire – 2Volumes.*
- (6) K.R.Basavaraja, *History and Culture of Karnataka, (Dharwad, 1984)*
- (7) Sheik Ali,B - : *Karnataka Charithre Vol 1-7, Hampi University*

DSE-1.1: FOOD AND INDUSTRIAL MICROBIOLOGY

Paper V

48 (3hrs/week) 3 Credits

Subject Code: 212519

Course objectives: This paper aims to introduce general principles of food microbiology, food spoilage causing microorganisms; methods of food preservation and microbiological examination of foods and its microbiological quality control. It also deals with strain improvement methods, fermentation techniques, bioreactor design, and downstream fermentation process.

Course / Learning outcomes:

- Students will understand the importance and activities of microorganisms in food.
- Students will analyze the importance of microbiological quality control in food production.
- Students will also understand the microbial production of industrial products such as antibiotics, enzymes, wine and mushroom cultivation.
- Comprehend the techniques and the underlying principles in downstream processing
- Understand the rationale in medium formulation & design for microbial fermentation, sterilization of medium and air
- The course will also be useful for students aiming towards careers in Dairy and food industries as Microbiologist, Entrepreneurship, Quality Assurance, Research Officer and Research Associate.

Unit I Food Microbiology

12hrs

Spoilage of food: Introduction, Scope of Food Microbiology, Sources of contamination, Food as a substrate for the growth of microorganisms (Intrinsic and extrinsic factors that affect growth and survival of microbes in foods). Microbial spoilage and preservation of fruits, vegetables, meat and canned foods.

Principles and methods of food preservation: Physical methods of food preservation: temperature (low, high, canning, and drying), irradiation, and aseptic packaging, Chemical methods of food preservation: salt, sugar, organic acids (propionates, benzoates, sorbates), SO₂, nitrite and nitrates, and antibiotics.

Unit II Dairy Microbiology

12hrs

Microbiology of milk: Introduction, Sources of milk contamination. Methods to detect microbial quality by SPC, Reductase test, and clot on boiling test. Biochemical changes of milk-souring, gassy fermentation, proteolysis, lipolysis, ropiness. Starter culture and its role.

Therapeutic value of Yoghurt. Cheese (preparation and types). Preservation of milk and milk products - Pasteurization.

Food infection and safety: Origin, types and importance of toxins with reference to Food infection (Salmonellosis) and Food intoxication (Aflatoxin, Botulism). Food safety and quality control.

Unit III Industrial microbiology

12hrs

Fermentor and fermentation medium: Microorganisms of industrial importance. Types of stock culture. Strain improvement. Fermentation media: Production medium, Inoculum medium, Raw materials (Molasses and its types, corn steep liquor, and whey). Buffers, Precursors, Inhibitors and Antifoam agents. Design of typical fermentor.

Industrial processes: Batch and Continuous fermentation, Surface, Submerged and Solid state fermentation. Downstream processing- Precipitation, centrifugation, cell disruption, solvent recovery, drying, crystallization.

Unit IV Industrial production

12hrs

Microbial production of industrial products: Industrial production and uses of Ethyl alcohol, wine, Penicillin, Lactic acid, Amylase, *Spirulina*. Mushroom cultivation-Oyster mushroom and its nutritional value.

Enzyme immobilization: Methods of immobilization, advantages and applications of immobilization, large scale applications of immobilized enzymes (glucose isomerase and penicillin acylase).

FOOD MICROBIOLOGY

1. a) Isolation and enumeration of bacteria from food utensils.
2. b) Isolation and identification of fungi from food utensils.
3. a) Isolation and enumeration of bacteria from spoiled vegetables.
4. b) Isolation and identification of fungi from spoiled vegetables.
5. a) Isolation and enumeration of bacteria from spoiled fruits.
6. b) Isolation and identification of fungi from spoiled fruits.
7. Isolation and identification of *Aspergillus* on groundnut by blotters method.
8. Microscopic examination of idli batter.

DAIRY AND INDUSTRIAL MICROBIOLOGY

1. Quantitative examination of bacteria in raw and pasteurized milk by SPC method.
2. Turbidity test to detect efficiency of sterilization.
3. Methylene blue Reductase test to determine the quality of milk.
4. Preparation of wine from grapes.
5. Cultivation of Oyster mushroom by bag method.
6. Estimation of % alcohol in a given sample by specific gravity bottle method.
7. Culturing of *Spirulina*.
8. Visit to Dairy Industries/ Distilleries/ Reports.

Managerial Economics and Business Decisions

Choice Based Credit System [CBCS]

Discipline Specific Elective (DSE-2)

Subject Code: 211525

Teaching Hours: L: 5 + T:2 = 7 Hours per week, 6 Credits (Total no. of Working Hours – 96)

Course objectives:

The aim of the course is to provide a foundation in applied economic analysis and develop skills required for empirical research in economics. The course begins with some basic concepts and terminologies that are fundamental to address the problems of business firms. It is followed by the study of demand forecasting which is the core of business activities including linear programming. Also discusses about pricing methods and deals with the study and analysis of profit management and ends with capital budgeting and cost of capital.

Course / Learning outcomes:

- The learning output of this programme is to ensure the development of an understanding of Micro and Macro Theory and their application to business fields.
- The expected outcome from this course is a measureable increase in the skills and knowledge of the student in the area of applied economics,
- The programme will also help the learners to seek employment avenues in the development sector and/or other upcoming sectors like banking, insurance and otherservice sectors.
- The programme will also encourage the learners to go for higher studies

Module-1: Introduction to Managerial Economics

18 hours

Meaning and Definitions of Managerial Economics - Nature, Scope and Importance of the Study of Managerial Economics. Application of Basic Economic Principles to Managerial Problems: Incremental, Discounting, Time Perspective, Opportunity Cost and Equi-Marginal Principle (with emphasis on problems), Role and functions of Managerial Economist.

Module-2: Demand Forecasting

20 hours

Meaning, Objectives and Determinants of Demand Forecasting, Demand Forecasting Methods: Survey Methods - Complete Enumeration and Sample Survey Methods - Experts opinion method, Statistical Methods: Semi Average, Moving Average and Least Square Methods (with Emphasis on Problems).

Module-3: Linear Programming

12 hours

Meaning - Basic Concepts - Applications of Linear Programming to Cost Minimization and Profit Maximization problems - Graphic Method - Procedure used in Formulating and Solving Linear Programming Problem.

Module-4: Pricing Policy and Methods

18 hours

Meaning and Objectives, Methods of pricing policy: Cost Plus pricing, Marginal Cost Pricing, Multiple Product Pricing, Transfer Pricing, Pricing of New commodities: Skimming and Penetration Pricing Policy.

Module-5: Profit Management and Capital Budgeting

28hours

Meaning and types of Profit - Accounting Profit and Economic Profit, Break-Even Analysis – Meaning – Assumption & Uses. Determination of BEP in terms of Physical units and monetary term – BEP Chart. Problems: Break- Even Quantity, Break-Even Sales - Targeted Profit, Safety Margin.

Capital Budgeting: Meaning and Importance - Techniques: Payback Period and Net Present Value (NPV) Method. Cost of the capital: Meaning and types: Cost of debt capital, Share capital and Equity capital

Books for References:

1. Mehta P L. *Managerial Economics*, Sultanchand & Sons, New Delhi.
2. Dwivedi D.N. *Managerial Economics*, Vikas Publishing House Pvt., Ltd, New Delhi.
3. Mithani D.M. *Managerial Economics*, Himalaya Publishing House, Mumbai.
4. Peterson H. Craig and W. Cris Lewis, *Managerial Economics*, Pearson Education Singapore.
5. Salvatore Dominick. *Managerial Economics*, McGraw Hill, New York.
6. Vashney R L and Maheshwari K L, *Managerial Economics*, Sultanchand & Sons, New Delhi.
7. Keat P G and Young P K Y, *Managerial Economics*, Pearson Education Singapore
9. Kaveri R and Sudha nayak U K Sultanchand & Sons, New Delhi.

Web links

<https://theinvestorsbook.com/managerial-economics.htm>

<https://www.yourarticlibrary.com/managerial-economics/managerial-economics>

<https://redstagfulfillment.com/what-is-demand-forecasting>

<https://theinvestorsbook.com/pricing-methods.html>

<https://www.nationalfunding.com/blog/break-even-analysis>

ENTREPRENEURSHIP DEVELOPMENT

(Course Code: 213514)

(LTP 3:1:0) (Credit: 4)

(Hours Per Week: 05) (Total Hours: 80)

Course Objectives: To help students acquire entrepreneurial skills this shall give wings to the creative ideas of young minds. This will help harness their entrepreneurial potential to facilitate India achieve economic superpower.

Course Outcomes:

- To understand the concept of Entrepreneur and Entrepreneurship and to learn different traits of Entrepreneurship.
- To understand the importance of EDP and also the role of different EDP Institutions.
- To know the importance of State and Central Government in Entrepreneurial Development in India.
- To learn the different forms of business and steps to be undergone in setting up a Business, with preparation of Business Plan.
- To understand the Recent Trends in Entrepreneurship and also the role of Social Entrepreneurship.
- To Learn Ethics in the Business and its Social Responsibility.

UNIT-1-Introduction: Meaning, Definition of Entrepreneur, Enterprise, Entrepreneurship, steps in the Entrepreneurial Process: Generating Ideas, Opportunity Identification, Business concepts, Resources (Financial, Physical and Human), Implementing and managing the venture, harvesting the venture. Characteristics of successful entrepreneur, Functions, Role of entrepreneur in economic development, Women Entrepreneur, Rural Entrepreneur, Agricultural Entrepreneur-Meaning and Challenges. **(12 Hours)**

UNIT-2-Entrepreneurship Development Program(EDP): Meaning, Objectives, Importance, Institutions doing EDP in India, DIC, CEDOCK, SSI, NSIC, EDII, AWAKE, KVIC, RUDSETI, Industrial Estate - Meaning and Importance. **(12 Hours)**

UNIT-3- Financing of small business in India: Institutional and Non-Institutional Assistance, SFCs, Banks, SIDBI, NBFC-Meaning and Schemes, Private Equity, Venture Capital, Bills Discounting, Factoring, State and Central Government Subsidies and Incentives for SSI(existing), Recent Industrial Policy (2011), PM MUDRA YOJANA-Meaning- Objectives-Procedures for obtaining loan under MUDRA. Foreign Direct Investment. **(14 Hours)**

UNIT-4-Setting up of New Business: Forms of Small Business-Small Proprietorship, Partnership, Private Company, Limited Liability Partnership, Cooperative Society-Meaning and Nature, Introduction to the Business Plan, Developing the Business Model for starting a new venture, Project Formulation, Project Report-Meaning-Importance-General format of Project Report, Project Appraisal-Financial-Technical-Marketing, Social Feasibility Study, Obtaining License, Clearance Certificate, Registration Procedure. Real life Start up Stories of India like Oyo, Flipkart etc explaining the importance of how problems are converted into opportunities and practical problems faced by entrepreneurs. Case Study Analysis can be given to each student and a discussion wherein every student's analysis and ideas are shared. **(16 Hours)**

UNIT-5- Self Employment-Recent Trends in the areas of Self Employment, Event Management-Meaning and areas of business in Event Management (Party Organizing, Catering, Wedding Plan and Corporate Event Plan) Tourism-Meaning-Tourism Products, E-Marketing as Self Employment Opportunity. **(13 Hours)**

UNIT-6 -Business Ethics-Meaning, Ethics in Business, Importance, Various Social Responsibility of an Entrepreneur towards Customers, Suppliers, Government and Society, Real life Example of business models in India and the world wherein Business Ethics are followed. **(13 Hours)**

Books for Reference:

1. Entrepreneurship And Small Business Management- C B Guptha And S S Khanka
2. Entrepreneurship Development – C B Guptha And Srinivasan
3. Entrepreneurship development –Shankaraiah
4. Entrepreneurship development-S S Khanka
5. Management of small scale business and entrepreneurship- Vasantha Desai.

INDIRECT TAXES-II
(Course Code: 213627)

(LTP 4:1:0) (Credit: 5)

(Hours Per Week: 06) (Total Hours: 96)

Course Objectives: To enable students gain an in depth understanding of GST Act; to learn the basics customs duty and GST Implications on Customs duty computation

Course Outcome:

1. To make the students understand the concept of Supply along with the rules related to time, place of supply
2. To help the students compute the Goods and Service Tax (GST) payable by a supplier after considering the eligible input tax credit.
3. To help students understand the persons liable for registration and the persons not required to obtain registration under the GST law
4. Assessing value of goods
5. To aware the students regarding the various types of Duties

Unit-1- Value of Taxable Supply: Conditions, inclusions, Consideration not wholly in money, Supply between two related persons, Supply through agent, cost based value, Residual valuation, specific supplies, Service of pure agent, Problems on determination of value of supply. **(20 Hours)**

Unit-2- Input tax credit: Meaning, conditions for taking credit, Input Tax Credit Procedure, ineligible input tax credit, reversal & apportionment of credit, availability of credit in special circumstances, Input tax credit and change in constitution of registered person, Taking input tax credit in respect of inputs and capital goods sent for job work, Manner of Distribution of Credit by Input Service Distributor (ISD) **(20 Hours)**

Unit-3-Tax Invoice, Credit and Debit Notes: Tax invoice, Prohibition of un authorised collection of tax, Amount of tax to be indicated in tax invoice and other documents, Credit and debit notes. **(12 Hours)**

Unit-4-Registration under GST: Persons liable for registration, Persons not liable for registration compulsory registration, Voluntary registration Procedure for Registration, Rejection of application for registration, cancellation & suspension of Registration. **(12 Hours)**

Unit-5>Returns: Brief introduction to various GSTRS, Procedure for filing various return. **(16 Hours)**

Unit-6- Customs Act 1962: Meaning, Notified goods, specified goods, Prohibition of importation and exportation under sec 11- types of customs duty- Basic customs duty, Education Cess, Anti dumping duty, Safeguard Duty, IGST, GST Compensation Cess- Computation of Assessable value and applicable duties. Exports – Meaning- zero rated supply, Remission of Duties and Taxes on Export Products **(16 Hours)**

References:

1. www.cbec.gov.in/
2. Systematic Approach GST- Dr.Ravi.Gupta , Dr.Girish.Ahuja
3. <https://www.gst.gov.in/>
4. <https://cleartax.in/s/gst-law-goods-and-services-tax>
5. Taxmann publication
6. Compendium on Goods and Service tax

DSE-2.1: IMMUNOLOGY AND MEDICAL MICROBIOLOGY

Paper VI

48(3hrs/week) 3 Credits

Subject Code: 212639

Course objectives: This paper aims to introduce the Types of immunity and immune system, Cells and tissues of immune system, Antigen and Antibody structure, Serological tests, Immunological disorders and vaccines. This paper also deals with Bacterial, Viral, Fungal, Protozoan diseases and Chemotherapy.

Course / Learning outcomes:

- Students will be able to correlate disease symptoms with causative agent, isolate and identify pathogens.
- They will gain knowledge of mechanism of action of antimicrobial drugs and prophylaxis.
- Recognize the basis for antibiotic resistance and ways of controlling spread of antibiotic resistance.
- It also provides opportunities to develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in the diagnosis of infectious diseases.
- To understand the importance of pathogenic bacteria in human disease with respect to infections of the respiratory tract, gastrointestinal tract, urinary tract, skin and soft tissue.
- The course will also be useful for students aiming towards careers in diagnostic laboratories, Microbiologist, Quality Assurance, Research Officer and Research Associate.

Unit I Immunity and Immune system

12 hrs

Introduction to immune system: History of immunology. Contributions of following scientists to the development of field of immunology - Edward Jenner, Robert Koch. Types of immunity-innate (non-specific) and Adaptive immunity (specific)- Antibody (humoral) mediated immunity and cell mediate immunity.

Lymphatic system: Cells and tissues of immune system-structure and role of primary lymphoid organs (bone marrow, thymus), secondary lymphoid organs (spleen, lymph nodes and tonsils), B & T lymphocytes. Antigens- Definition, nature (Foreignness, Molecular size and Heterogeneity) and types, Adjuvants. Antibodies- definition, structure, class- properties and functions of Immunoglobulins.

Unit II Serological tests and Immunological disorders

12 hrs

Antigen-antibody reactions: Definition, Salient features, Agglutination (Blood grouping, Widal test) Precipitation Reaction (Gel diffusion techniques, VDRL), Neutralization, Opsonisation, complement fixation test. Immuno-fluorescent techniques- RIA, ELISA.

Immunoprophylaxis: Vaccine-Types – Killed, Live attenuated (bacterial and viral) and Toxoid with an example each. National immunization schedule (Tabular form)

Unit III Medical Microbiology

12 hrs

Introduction to medical microbiology: History and development of medical microbiology. Normal flora of human body-skin, oral cavity, respiratory tract and urogenital tract. Infection-types of infection, modes of disease transmission, portal of entry of pathogen. Pathogenesis, virulence, attenuation and exaltation with an example each.

Bacterial diseases: Cultural and biochemical characteristics, pathogenesis, symptoms, mode of transmission, prophylaxis and control of Respiratory diseases: *Mycobacterium tuberculosis*. Gastrointestinal diseases: *Salmonella typhi*. Others: *Treponema pallidum*.

Unit IV Viral, Fungal and Protozoan disease and Chemotherapy

12 hrs

Human pathogen: Pathogenesis, clinical symptoms, laboratory diagnosis, epidemiology, prophylaxis and treatment of viral diseases (Dengue, AIDS). Fungal diseases- transmission, symptoms and prevention of Dermato mycosis (Athlete's foot), Candidiasis. Protozoan diseases (Malaria, Trichomoniasis).

Chemotherapy: General characteristics, types of antimicrobial agents. Mode of action of Antibacterial (Penicillin, Streptomycin) Antifungal (Nystatin), antiviral-Acycloguanosine.

VI SEMESTER

PRACTICAL-VII

(6hrs/week) 3 Credits

IMMUNOLOGY

1. Determination of blood group and Rh factor
2. Demonstration of precipitation reaction- ODD
3. Demonstration of single Radial ImmunoDiffusion
4. Widal Test
5. VDRL test
6. Neutralization Test
7. Complement fixation test
8. ELISA

MEDICAL MICROBIOLOGY

1. Study of bacterial flora of skin by swab method
2. Microbial flora of oral cavity.
3. Antibiotic sensitivity test
4. Study of composition and use of important differential media for identification of bacteria: EMB Agar, McConkey agar, Mannitol salt agar, Deoxycholate citrate agar, TCBS
5. Culturing of microorganisms - Urine culture
6. Culturing of microorganisms - Blood culture
7. Material/Microscopic observation/display of photographs of human pathogens as per theory syllabus- *Mycobacterium tuberculosis*, *Treponema pallidum*, *Salmonella typhi*, Dengue, HIV, *Candida albicans*, *Tinea*, *Plasmodium*, *Trichomonas vaginalis*.
8. Visit to laboratory/report.

SEC-2: CLINICAL BIOCHEMISTRY

Course duration: 16 weeks with 2 hours of instruction per week (32 hrs)

Subject Code: 212668

No. of Credits: 2 Credits

Course objectives:

The main objective of this course is to impart students an understanding of clinical biochemistry. Students will learn about the normal constituents of urine, blood and their significance in maintaining health. Students will get acquainted with the role of enzymes in diagnosis of various diseases.

Learning outcomes:

After completion of this course, students will

- Apply biochemical knowledge in normal & diseased states.
- Have knowledge regarding the biological sample collection, analysis of biological fluids for its chemical constituents and to correlate the same in health and disease.
- Develop skills of performing biochemical techniques and interpreting the data.
- Understand the importance of enzymes in diagnosis of diseases.
- Understand the physiological and clinical importance of Haemoglobin.

UNIT I

17 hrs

Introduction:

Clinical biochemistry: Definition, scope, collection & preservation of biological fluids.

1 hr

Urine:

Normal composition of urine – Volume, pH, colour and specific gravity.

Chemical analysis and normal values of the constituents- urea, uric acid, creatinine, pigments and their clinical significance.

6 hrs

Abnormal constituents - glucose, albumin, ketone bodies and bile pigments and their pathological significance.

Blood:

10 hrs

Normal constituents of blood and their variation in pathological conditions- urea, uric acid, creatinine, glucose, bilirubin, total protein, albumin/globulin ratio.

Blood- RBC, WBC and platelets: structure and functions. Total WBC count, differential count, erythrocyte count, platelet count, glycated haemoglobin, Hb%, ESR. C-reactive protein and subpopulation of blood cells.

Lipid profile: cholesterol, triglycerides, lipoproteins: chylomicrons, VLDL, LDL and HDL. Hypo and lipoproteinemia, atherosclerosis.

UNIT II:**15hrs****Clinical enzymes:****3 hrs**

Alkaline phosphatase, serum transaminases (SGPT & SGOT),
Cardiac injury profile- CPK and LDH.

Liver disorders:**6 hrs**

Cirrhosis, hepatitis, fatty liver and jaundice (pre, post and hepatic). Estimation of conjugated and total bilirubin in serum (Diazo method). Detection of bilirubin and bile salts in urine (Fouchet's test and Hay's test).

Inborn errors of Metabolism:**6 hrs**

Glycogen storage disease (Von-Gierke's disease), fructosuria, galactosemia, phenylketonuria, alkaptonuria, albinism, Lesch-Nyhan syndrome, Niemann-Pick disease.

Books for References:

1. Sembulingam K and Prema Sembulingam, Essential of Medical Physiology, 3rd Edn., Jaypee Brothers, New Delhi(2005).
2. Geoffrey Beckett, Simon Walker, Peter Rae and Peter Ashby, Clinical Biochemistry, 7th Edn., Blackwell Publishing (2005).
3. Prasad R Manjeshwar, Textbook of Biochemistry For Medical students, 4th Edn., RM Publications, Mangalore, India.
4. Shivananda Nayak B, Manipal Manual of Clinical Biochemistry, 3rd Edn., JAYPEE Brothers, New Delhi(2007).
5. Ranjna Chawla, Practical Clinical Biochemistry: Methods and Interpretations, 4th Edn., Jaypee Brothers, New Delhi(2014).
6. Chatterjea M N and Rana Shinde, Textbook of Medical Biochemistry, 6th Edn., Jaypee Brothers, New Delhi(2005).
7. Satyanarayan U and Chakrapani U, Biochemistry, 3rd Edition, Books and Allied (P) Ltd, Kolkata.
8. Vasudevan D M , Sreekumari S and Kannan Vaidyanathan , Textbook of Biochemistry For Medical Students, 6th Edn., Jaypee Brothers, New Delhi(2011).
9. Lauralee Sherwood, Human Physiology: from Cells to Systems, 5th Edn., Thomson Brooks/Cole.
10. Delvin T M, Text book of Biochemistry with Clinical Correlation, John Wiley & Sons Inc. USA(1982),

Web links:

- 1 <https://www.journals.elsevier.com/clinical-biochemistry>
2. <https://www.medicalnewstoday.com/articles/322380>
3. <https://www.springer.com/journal/12291>

Skill Enhancement Courses (SEC)

Course Code: 21NCC94	Course Title: NCC
Course Credits (L:T:P): 01 (0:0:1)	Teaching Hours/Week: 02 Hours
Total Contact Hours: 28 Hours	Formative Assessment Marks: 10
Exam Duration: 1 Hour (Practical)	Semester End Examination Marks: 15

Course Objective:

To develop Character, Comradeship, Discipline, Leadership, Secular Outlook, Spirit of Adventure and the Ideals of selfless Service among the youth of the Country.

Course Outcomes:

CO1: Acquire the concept of NCC

CO2: Improvised Outlook and Turnout

CO3: Work for the Social Well Being

Unit 1: Introduction to NCC, Aims and Objectives, Organisation structure, Ranks, NCC song, Incentives, Code of ethics and Conduct.

Unit 2: Drill-improve bearing and smartness, Turnout, Obedience to Orders, Types of Drill.

Unit 3: National integration, Health and Hygiene, Personality development and leadership, Social awareness and Community development, Environment awareness and Conservation.

Course Articulation Matrix – 21NCC94

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	1	2	2	2	2	2	-	2
CO2	2	1	1	-	-	1	1	2	3	2	1	2
CO3	2	1	1	1	1	2	2	2	3	2	1	2
Wtd. Avg.	2	1	1	1	1	1.6	1.6	2	2.6	2	1	2

Course Code: 21SP094	Course Title: Physical Education and Sports
Course Credits (L:T:P): 01 (0:0:1)	Teaching Hours/Week: 02 Hours
Total Contact Hours: 28 Hours	Formative Assessment Marks: 10
Exam Duration: 1 Hour (Practical)	Semester End Examination Marks: 15

Course Outcome (CO): Plan, organize and execute sports events.

Content of Theory & Practical Course	Hours
Unit 1: Physical Education & Sports <ul style="list-style-type: none"> • Conditioning exercises • Aerobics & Calisthenics • One Major Game and One Indigenous Game (Basic Skills) • One Track/Field Event • Intramural Competitions 	28

Course Articulation Matrix – 21SP094

CO/ PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	1	1	1	2	1	1	2	1	2	1	2
Wt. Avg	1	1	1	1	2	1	1	2	1	2	1	2

Course Code: 21NSS94	Course Title: National Service Scheme (NSS)
Course Credits (L:T:P): 01 (0:0:1)	Teaching Hours/Week: 02 Hours
Total Contact Hours: 28 Hours	Formative Assessment: 10 Marks
Exam Duration: 1 Hour (Practical)	Semester End Examination: 15 Marks

Course Outcomes:

- CO1:** Acquire the fundamentals concept of NSS
- CO2:** Understand the Volunteerism & Organization structure of NSS
- CO3:** Appreciate the culture of Campus Activities, Shramadha and Awareness Program and its Benefits through working as a team or group.
- CO4:** Develop overall personality of volunteers, Off Campus Activities and make them as leaders and responsible Citizens of our nation.

Course Contents	Hours: 28
Unit – I: Fundamentals of NSS	
Introduction to NSS, Origin of NSS, Aims and Objectives of NSS, NSS Motto, NSS Emblem, NSS Badge, NSS Day, NSS Songs.	07
Unit - II : Volunteerism & Organization structure of NSS	
Volunteerism and NSS: Volunteerism – Meaning, definition, basic qualities of volunteers, need of volunteerism for National development. Organization structure of NSS- National level, State level, University and Institutional Level.	07
Unit -III: Campus Activities	
Shramadha – Plantation, Cleaning, Watering, Weeding, Any other activities. Awareness Programmes – Seminar, Workshops, Celebration of National and International days, Personality Development Programmes, Group Activities, etc.,	07
Unit -IV: Off Campus Activities	
Rally, Jatha, Visit to Adopted villages, Swachatha Programme, Visit and Conserving Ancient monuments and heritage site, Socio Economic Survey of village/slum, Nature Camp, Environmental Education, JOB Card (APL, BPL, Social security schemes), Women Empowerment Programme, Health Camps, Blood grouping awareness and Blood donation, Legal awareness Programme, Literacy Programme, Water Conservation Programme, One Day Special Camp in a village (preferably in adopted village).	07

References:

- a) Prof.B.K.Shivanna,“NationalServiceScheme”PrintingPressKSOU,Mysore2011
- b) MadhuAhuja, Students Leaders in the National Service Scheme (NSSS) in Delhi : A case study 1986 (New Delhi : Dept. of Management and Extension, Lady Irwin College, University of Delhi, 1986)
- c) Chattarjee, B., Social service opportunities for students in Slum Areas (reprint: Delhi : Delhi School of Social Work, University of Delhi 1973)
- d) Desai Bharat. H, A Social Psychological Study of the effectiveness of the National Service Scheme in developing some aspects of the Student Personality – (Ph.D Thesis submitted to university of Pune 1982)
- e) Dixit. P Sanjeeva, National Service Scheme in Andhra Pradesh, (Andhra University Press Publications, 1994)
- f) Dilshad. M.B National Service Scheme in Karnataka, (Ph. D Thesis submitted to Karnataka University Dharwad, 1997)
- g) Balan K., (1985), Youth Power in the Modern World, Ajanta Publications, New Delhi
- h) Jones Gill, (2009), Youth, Polity Press, UK
- i) Kehily Jane Mary (Etd.) (2007), Understanding Youth: Perspectives, Identities and Practices, Sage Publication, London
- j) Landis H. Paul, (2011), Adolescence and Youth: The Process of Maturing, Sarup Book Publishers Pvt. Ltd., New Delhi

Course Articulation Matrix- 21NSS94

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	-	1	3	3	2	3	2	1	3
CO2	1	2	1	1	-	3	3	3	3	2	1	2
CO3	2	2	2	1	-	3	3	3	3	2	1	3
CO4	2	3	1	1	1	3	3	3	3	3	2	3
Weighted Average	1.75	2.25	1.5	1	1	3	3	2.75	3	2.25	1.25	2.75

CourseCode: 21RNR94	CourseTitle: Rangers and Rovers
CourseCredits: 01 (0:0:1)	HoursofTeaching/Week: 2Hour(Practical)
TotalContactHours: 28Hours	FormativeAssessmentMarks: 10
ExamDuration: 1Hour(Practical)	SemesterEnd Examination Marks: 15

Course Objective:

1. To practice national integration.
2. To develop personality through community services.
3. To work with and among people.
4. To gain leadership skills.
5. To enable students to have ethical sense.

Course Outcomes:

CO1: Assimilate the knowledge and inculcate the Leadership, good manners and ideals of disciplined responsible young citizens.

	Content of the Course	Hours
Unit -I	Introduction and Knowledge - Roving and Ranging, Prayer & Flag Song, Flags, Promise and Law, DisciplineandUniform, FirstAid, Knots, Makeascarfusingthematerialavailableatyourhome.	8
Unit - II	Skills : Team building and leadership skills- Campfire/ LocalHandicraft/ Collegelevelcleanlinessdrive/ rope work/ cooking/first aid/ signaling/ skill oriented Games- In-doorandOutdoorGames ,etc	10
Unit - III	Groupactivities: Community service- sustainabledevelopment/Borewellrecharge/Foodsavewarriors/Organizescienceexhibition/RoadSafety awareness/RainWaterHarvesting/LocalFestivalsservice/Prepare Seed Balls/TeachingGame etc.	10

ReferenceBooks

1. ScoutingforBoys
2. RovingtoSuccess
3. GirlGuidinginIndia
4. RangerHandbook
5. RangerLeaderHandbook
6. RoverScouting
7. Allfaithprayer
8. PioneeringHandBook
9. B.P.SixExercise
10. CampFireBook
11. CampingandHiking
12. DrillandMarchpast
13. KnotsandPioneering
14. APRO – II
15. APRO –III
16. <http://sdgs.scout.org>

Note: Referencebooksandmaterialsavailableat<http://shop.bsgkarnatka.org>

Address:The Bharat Scouts and Guides, KarnatakaStateHeadquarters
#39, Shantini Gruha, Palace RoadBangalore -560001

Course Articulation Matrix – 21RNR94

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	2	3	3	2	2	1	2
Wtd. Avg.	2	1	1	1	1	2	3	3	2	2	1	2