



UNIVERSITY OF MYSORE

B.Com.

Third Semester and Fourth Semester Syllabus

Academic Year 2023-24

**PROCEEDINGS OF THE BOARD OF STUDIES IN COMMERCE (CB) HELD ON 14THSeptember 2023 AT 11 AM
AT DEPARTMENT OF STUDIES IN COMMERCE, MANASAGNAGOTRI, MYSRURU-6**

Sl. No.	Decision
Agenda 1	Approval of Syllabus of B.Com.3rd and 4th Semesters for the academic year 2023-24 as per model syllabus framed by Karnataka State Higher Education Council, Bangaluru, under NEP 2020.
Decision	Resolved to approve the Syllabus of B.Com. 3 rd and 4 th Semesters for the academic year 2023-24 as per model syllabus framed by Karnataka State Higher Education Council, Bangaluru, under NEP 2020. <u>Annexure 1</u>

1.Prof.B.Mahadevappa, Chairman, BOS in Commerce (CB)
2.Prof.H.Rajashekar, Member, BOS in Commerce(CB)
3.Prof.K.Nagendra Babu, Member, BOS in Commerce(CB)
4.Prof.B.Nagaragu, Member, BOS in Commerce(CB)
5.Prof.N.Nagaraja, Member, BOS in Commerce(CB)
6.Prof.T.S.Devaraja, Member, BOS in Commerce(CB)
7.Prof.M.Kumara Swamy, Member, BOS in Commerce(CB)
8.Prof. Ashoka M L, , Member, BOS in Commerce(CB)
9.Prof.Sarvamangala, Member, BOS in Commerce(CB)
10.Prof.Muniraju, Member, BOS in Commerce(CB)
11.Prof.Krishnamurthy M, Member, BOS in Commerce(CB)
12.Prof.Veena D'Almedia, Member, BOS in Commerce(CB)
13.Prof.Jayashankara K B, Member, BOS in Commerce(CB)
14. Prof.B.S.Yogesha, Member, BOS in Commerce (C)
15. Sri.Thejswi M R, Member, BOS in Commerce (C)

III Semester B.Com								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	SEE	CIE	Total Marks	Credits
16	Lang.1.1	Language-I	AECC	3+1+0	60	40	100	3
17	Lang.1.2	Language-II	AECC	3+1+0	60	40	100	3
18	B.Com.3.1	Corporate Accounting	DSC	3+0+2	60	40	100	4
19	B.Com.3.2	Business Statistics	DSC	3+0+2	60	40	100	4
20	B.Com.3.3	Cost Accounting	DSC	3+0+2	60	40	100	4
21	B.Com.3.4	Artificial Intelligence OR Financial Education. & Investment Awareness	SEC	1+0+2	60	40	100	2
23	B.Com.3.5	India and Indian Constitution OR 1. Advertising Skills/ 2. Entrepreneurial skills	AECC OR OEC	3+0+0	60	40	100	3
24	B.Com.3.6	Sports/NCC/NSS/R & R /S & /Cultural	SEC-VB	1+0+2	-	100	100	2
Sub-Total(C)					420	280	700	25

IV Semester B.Com.								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L+T+P)	SEE	CIE	Total Marks	Credits
25	Lang.1.1	Language-I	AECC	3+1+0	60	40	100	3
26	Lang.1.2	Language-II	AECC	3+1+0	60	40	100	3
27	B.Com.4.1	Advanced Corporate Accounting	DSC	3+0+2	60	40	100	4
28	B.Com.4.2	Costing Methods & Techniques	DSC	3+0+2	60	40	100	4
29	B.Com.4.3	Business Regulatory Framework	DSC	4+0+0	60	40	100	4
30	B.Com.4.4	Artificial Intelligence OR Financial Education. & Investment Awareness	SEC	1+0+2	60	40	100	2
31	B.Com.4.5	Sports/NCC/NSS/R & R /S & /Cultural	SEC-VB	1+0+2	-	100	100	2
32	B.Com.4.6	1. Business Ethics or/ 2. Corporate Governance OR India and Indian Constitution	OEC OR AECC	3+0+0	60	40	100	3
Sub-Total(D)					420	380	800	25

**Third Semester B.Com.
Academic Year 2023-24**

Name of the Program: Bachelor of Commerce (B.Com.)		
Course Code: B.Com.3.1		
Name of the Course: Corporate Accounting		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs
Pedagogy: Classroom lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,		
Course Outcomes: On successful completion of the course, the students will be able to		
<ul style="list-style-type: none"> a) Understand the treatment of underwriting of shares. b) Comprehend the computation of profit prior to incorporation. c) Know the valuation of intangible assets. d) Know the valuation of shares. e) Prepare the financial statements of companies as per companies act, 2013. 		
Syllabus:		Hours
Module No.1: Underwriting of Shares		12
Introduction - Meaning of Underwriting - SEBI regulations regarding underwriting; Underwriting commission. Underwriter - functions - Advantages of Underwriting, Types of underwriting - Marked and Unmarked Applications - Determination of Liability in respect of underwriting contract - when fully underwritten and partially underwritten - with and without firm underwriting problem.		
Module No.2: Profit Prior to Incorporation		10
Introduction - Meaning - calculation of sales ratio - time ratio - weighted ratio - treatment of capital and revenue expenditure - Ascertainment of pre-incorporation and post-incorporation profits by preparing statement of Profit and Loss and Balance Sheet as per schedule III of companies Act, 2013.		
Module No.3 Valuation of Intangible Assets		10
Introduction - Valuation of Goodwill - factors influencing goodwill, circumstances of valuation of goodwill - Methods of Valuation of Goodwill: Average Profit Method, Capitalization of average Profit Method, Super Profit Method, Capitalization of Super Profit Method, and Annuity Method - Problems. Brand valuation and Intellectual Property Rights (IPR).		
Module No.4: Valuation of Shares		10
Introduction - Meaning - Need for Valuation - Factors Affecting Valuation - Methods of Valuation: Intrinsic Value Method, Yield Method, Earning Capacity Method, Fair Value of shares. Rights Issue and Valuation of Rights Issue, Valuation of Warrants.		
Module 5: Financial Statements of Companies		14
Statutory Provisions regarding preparation of financial statements of companies as per schedule III of companies act, 2013 and IND AS-1 - Treatment of Special Items - Tax deducted at source - Advance payment of Tax - Provision for Tax - Depreciation - Interest on debentures - Dividends - Rules regarding payment of dividends - Transfer to Reserves - Preparation of Statement of profit and loss and Balance Sheet.		

Skill Development Activities:

1. Compile the list of Indian companies which have issued shares through IPO/FPO in the current financial year.
2. Determine Underwriters' Liability in case of an IPO, with imaginary figures. • Present the format of 'Statement of Profit and Loss', 'Balance Sheet' and 'Statement of Changes in Equity', with imaginary figures
3. Collect financial statement of a company and calculate intrinsic value of an equity share..
4. Collect annual report of a Company and List out its assets and Liabilities.
5. Collection of latest financial statements of a company and find out the intrinsic value of shares
6. Collect the annual reports of company and calculate the value of goodwill under different methods
7. Any other activities, which are relevant to the course.

Text Books:

1. J.R.Monga, Fundamentals of Corporate Accounting. Mayur Paper Backs, New Delhi.
2. M.C.Shukla, T.S.Grewal, and S.C.Gupta. Advanced Accounts. Vol.-II. S.Chand & Co., New Delhi.
3. S.N. Maheshwari, and S. K. Maheshwari. Corporate Accounting. Vikas Publishing House, New Delhi.
4. Ashok Sehgal, Fundamentals of Corporate Accounting. Taxman Publication, New Delhi.
5. V.K.Goyal and Ruchi Goyal, Corporate Accounting. PHI Learning.
6. Jain, S.P. and K.L.Narang. Corporate Accounting. Kalyani Publishers, New Delhi.
7. Bhushan Kumar Goyal, Fundamentals of Corporate Accounting, International Book House
8. P.C.Tulsian and Bharat Tulsian, Corporate Accounting, S.Chand
9. Amitabha Mukherjee, Mohammed Hanif, Corporate Accounting, McGraw Hill Education
10. Arulanandam & Raman; Corporate Accounting – II
11. Madegowda J – Advanced corporate accounting, HPH
12. Soundarajan. A & K. Venkataramana, Corporate Accounting, VBH.
13. S.P.Jain and K.L.Narang – Corporate Accounting
14. S.Bhat- Corporate Accounting.
15. S.Plyengar, Advanced Accountancy, Sultan Chand
16. R.L.Gupta, Advanced Accountancy.
17. Anil Kumar.S, Rajesh Kumar.V and Mariyappa.B, Corporate Accounting, HPH.

Note: Latest edition of textbooks may be used.

Name of the Program: Bachelor of Commerce (B.Com.)		
Course Code: B.Com.3.2		
Name of the Course: Business Statistics		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs
Pedagogy: Classrooms lecture, Case studies, Tutorial Classes, Group discussion, Seminar & field work etc.,		
Course Outcomes: On successful completion of the course, the students will be able to		
<ul style="list-style-type: none"> a. Familiarizes statistical data and descriptive statistics for business decision-making. b. Comprehend the measures of variation and measures of skewness. c. Demonstrate the use of probability and probability distributions in business. d. Validate the application of correlation and regression in business decisions. e. Show the use of index numbers in business. 		
Syllabus:		Hours
Module No.1: Statistical Data and Descriptive statistics.		14
Nature and Classification of data: Univariate, bivariate and multivariate data; Measures of Central Tendency: Mathematical averages including arithmetic mean, Properties and applications. Positional Averages - Mode and Median (including graphic determination).		
Module No.2: Measures of Variation: and Skewness		12
Measures of Variation: absolute and relative. Range, quartile deviation, mean deviation, standard deviation, and their coefficients, Properties of standard deviation/variance. Skewness: Meaning, Measurement using Karl Pearson and Bowley's measures; concept of Kurtosis.		
Module No.3: Probability Distributions		10
Theory of Probability. Approaches to the calculation of probability; Calculation of event Probabilities. Addition and multiplication laws of probability (Proof not required); Conditional probability and Bayes' Theorem (Proof not required)- Expectation and variance of a random variable - Probability distributions - Binomial distribution: Probability distribution function, Constants, Shape, Fitting of binomial distribution - Poisson distribution: Probability function, (including Poisson approximation to binomial distribution), Constants, Fitting of Poisson distribution- Normal distribution: Probability distribution function, Properties of normal curve, Simple problems.		
Module No.4: Correlation and Regression Analysis		12
Correlation Analysis: Meaning of Correlation: - types of correlation- Positive and negative correlation-simple, partial, and multiple correlation. linear and Non-linear correlation and Scatter diagram, Pearson's co-efficient of Correlation; Correlation and Probable error; Spearman's Rank Correlation co-efficient.- problems.		

Regression Analysis: meaning and definition- regression lines, Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients- problems.

Module 5: Index Numbers

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Meaning and uses of index numbers; Construction of index numbers: Fisher's ideal index number with Time Reversal and Factor Reversal Tests. Construction of consumer price indices Using Aggregative Expenditure method and Family Budget method.

Skill Development Activities:

1. Application of MS Excel Functions in statistical decision making and students should submit output of the same.
2. Collect the age statistics of 10 new married couples calculate Correlation coefficient.
3. Recall the use of probability theory in business.
4. Identify the applicability of correlation and regression in business decision making.
5. Construct consumer price indices with imaginary figures.
6. Any other activities, which are relevant to the course.

Text Books:

1. Levin, Richard, David S. Rubin, Sanjay Rastogi, and HMS Siddiqui. Statistics for Management. 7th ed., Pearson Education.
2. David M. Levine, Mark L. Berenson, Timothy C. Krehbiel, P. K. Viswanathan, Business Statistics: A First Course, Pearson Education.
3. Siegel Andrew F. Practical Business Statistics. McGraw Hill Education.
4. Gupta, S.P., and Archana Agarwal. Business Statistics, Sultan Chand and Sons, New Delhi.
5. Vohra N.D., Business Statistics, McGraw Hill Education.
6. Murray R Spiegel, Larry J. Stephens, Narinder Kumar. Statistics (Schaum's Outline Series), McGraw Hill Education.
7. Gupta, S.C. Fundamentals of Statistics. Himalaya Publishing House.
8. Anderson, Sweeney, and Williams, Statistics for Students of Economics and Business, Cengage Learning.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)		
Course Code: B.Com.3.3		
Name of the Course: Cost Accounting		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs
Pedagogy: Classrooms lecture, Case studies, Tutorial classes, Group discussion, Seminar & field work etc.,		
Course Outcomes: On successful completion of the course, the students will be able to		
<ul style="list-style-type: none"> a) Understand concepts of cost accounting & Methods of Costing. b) Outline the Procedure and documentations involved in procurement of materials & compute the valuation of Inventory. c) Make use of payroll procedures & compute idle and overtime. d) Discuss the methods of allocation, apportionment & absorption of overheads. e) Prepare cost sheet & discuss cost allocation under ABC. 		
Syllabus:		Hours
Module No. 1: Introduction to Cost Accounting		12
Introduction- Meaning and definition- Objectives, Importance and Uses of Cost Accounting, Difference between Cost Accounting and Financial Accounting; Various Elements of Cost and Classification of Cost; Cost object, Cost unit, Cost driver, cost centre; Cost reduction and Cost control; Methods and Techniques of Costing (Meanings Only); Use of IT in Cost Accounting; Limitations of Cost Accounting; Cost Sheet: Meaning and Cost heads in a Cost Sheet, Presentation of Cost Information in Cost Sheet. Problems on Cost Sheet, Tenders and Quotations.		
Module No. 2: Material Cost		12
Materials: Meaning, Importance and Types of Materials – Direct and Indirect Material Materials material control.- Inventory control Technique of inventory control, problems on level setting and EOQ. Procurement- Procedure for procurement of materials and documentation involved in materials accounting – Material Storage: Duties of Store keeper, pricing of material issues, preparation of Stores Ledger Account – FIFO, LIFO, Simple Average Price and Weighted Average Price Methods – Problems.		
Module No. 3: Employee Cost		10
Introduction – Employee Cost – types of labour cost- Labour Cost Control – time keeping and time booking and Payroll Procedure -Preparation of Payroll: Idle Time Causes and Treatment of Normal and Abnormal Idle time, Over Time Causes and Treatment- Labour Turnover- Meaning, Reasons and Effects of Labour turnover. Methods of Wage Payment: Time rates system and piece rates system, and the Incentives schemes- Halsey plan, Rowan plan and Taylor differential piece rates system- problems.		
Module No. 4: Overheads Cost		12
Introduction- Meaning and Classification of Overheads; Accounting and Control of Manufacturing Overheads: Estimation and Collection, Cost Allocation, Apportionment, Re-apportionment and Absorption of Manufacturing Overheads; Problems on Primary and Secondary overheads distribution using Reciprocal Service Methods (Repeated Distribution Method and Simultaneous Equation Method); Absorption of Overheads: Meaning and Methods of Absorption of Overheads; Problems on Machine Hour Rate.		

Module No.5: Reconciliation of Cost and Financial Accounts	10
<p>Introduction – meaning of reconciliation, Reasons for differences in Profits under Financial and Cost Accounts; Procedure for Reconciliation – Ascertainment of Profits as per Financial Accounts and Cost Accounts and Reconciliation of Profits of both sets of Accounts – Preparation of Reconciliation Statement – Problems.</p>	
<p>Skill Development Activities:</p> <ol style="list-style-type: none"> 1. Visit any Manufacturing entity, collect the method of inventory valuation adopted & procedure involved in procuring inventory. 2. Draw the format of five documents used for material accounting 3. Prepare dummy Payroll with imaginary figures. 4. Visit any large-scale organisation, identify the techniques used for controlling administrative, Selling & distribution overheads. 5. Visit any manufacturing entity and collect the cost data and prepare the cost sheet. 6. Any other activities, which are relevant to the course. 	
<p>Text Books:</p> <ol style="list-style-type: none"> 1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan, Cost Accounting: A Managerial Emphasis, Pearson Education. 2. Jawahar Lal, Cost Accounting, McGraw Hill Education 3. Madegowda J, Cost Accounting, HPH. 4. Rajiv Goel, Cost Accounting, International Book House 5. Jain, S.P. and K.L. Narang. Cost Accounting: Principles and Methods. Kalyani Publishers 6. Arora, M.N. Cost Accounting – Principles and Practice, Vikas Publishing House, New Delhi. 7. Maheshwari, S.N. and S.N. Mittal. Cost Accounting: Theory and Problems. Shri Mahavir Book Depot, New Delhi. 8. Iyengar, S.P. Cost Accounting, Sultan Chand & Sons 9. Mariyappa B Cost Accounting, HPH <p>Note: Latest edition of text books may be used.</p>	

Name of the Program: Bachelor of Commerce (B.Com.) Course Code: B.Com.3.5 (OEC) Name of the Course: Advertising Skills		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs
Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to <ol style="list-style-type: none"> a. familiarise with advertising concepts. b. Able to identify effective media choice for advertising. c. Develop ads for different media. d. Measure the advertising effectiveness. e. Analyse the role of advertising agency. 		
Syllabus:		Hours
Module No.1: Introduction		10
Communication Process; Advertising as a tool of communication; Meaning, nature and importance of advertising; Types of advertising; Advertising objectives. Audience analysis; Setting of advertising budget: Determinants and major methods.		
Module No.2: Media Decisions		07
Major media types - their characteristics, internet as an advertising media, merits and demerits; Factors influencing media choice; media selection, media scheduling, Advertising through the Internet-media devices.		
Module No.3: Message Development		08
Advertising appeals, Advertising copy and elements, Preparing ads for different media		
Module No.4: Measuring Advertising Effectiveness		10
Evaluating communication and sales effects; Pre- and Post-testing techniques		
Module No.5: Advertising Agency		07
a) Advertising Agency: Role, types and selection of advertising agency. b) Social, ethical and legal aspects of advertising in India.		
Skill Development Activities: <ol style="list-style-type: none"> 1. Analyse the audience feedback on advertisement of FMCG. 2. List out any ten products/services advertised through internet. 3. Design any two ads for print media. 4. Examine the legal aspects of advertising in India and submit the report. 5. Any other activities, which are relevant to the course. 		

TextBooks:

1. George E Belch, Michael A Belch, Keyoor Purani, Advertising and Promotion .An Integrated Marketing Communications Perspective (SIE), McGraw Hill Education
2. S. Wats Dunn, and Arnold M. Barban. Advertising: It's Role in Marketing. Dryden Press
3. Burnett, Wells, and Moriatty. Advertising: Principles and Practice. 5th ed. Prentice Hall of India, New Delhi.
4. Batra, Myers and Aakers. Advertising Management. PHI Learning.
5. Terence A. Shimp. Advertising and Promotion: An IMC Approach. Cengage Learning.
6. Sharma, Kavita. Advertising: Planning and Decision Making, Taxmann Publications
7. Jaishree Jethwaney and Shruti Jain, Advertising Management, Oxford University Press, 2012
8. Chunawala and Sethia, Advertising, Himalaya Publishing House
9. Ruchi Gupta, Advertising, S. Chand & Co.
10. O'Guinn, Advertising and Promotion: An Integrated Brand Approach, Cengage Learning

Note: Latest edition of textbooks may be used.

Name of the Program: Bachelor of Commerce (B.Com.)		
Course Code: OEC		
Name of the Course: Entrepreneurship Skills		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs
Pedagogy: Classrooms lecture, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to		
<ul style="list-style-type: none"> a. Discover their strengths and weaknesses in developing the entrepreneurial mind-set. b. Identify the different Government Institutions/Schemes available for promoting Entrepreneurs. c. Understand the various aspects to set-up an Enterprise. d. Familiarise Mechanism of Monitoring and maintaining an Enterprise. e. Know the various features for successful/ unsuccessful entrepreneurs. 		
Syllabus:		Hours
Module No.1: Introduction		10
Need of becoming entrepreneur- ways to become a good entrepreneur-Enabling environment available to become an entrepreneur. Self-discovery, Idea Generation-Idea Evaluation-Feasibility analysis- Finding team-Preparation of business model.		
Module No.2: Promoting Entrepreneur		08
Introduction-Different Government institutions/schemes promoting entrepreneurs: Gramin banks, PMMY-MUDRA Loan, DIC, SIDA, SISI, NSIC, and SIDO, etc.,		
Module No.3: Enterprise Set-up		08
Introduction-Way to set up an enterprise and different aspects involved: legal compliances, marketing aspect, budgeting etc.,		
Module No.4: Monitoring and Maintaining an Enterprise		10
Introduction-Day to day monitoring mechanism for maintaining an enterprise-Different Government Schemes supporting entrepreneurship.		
Module No.5: Caselets Discussion		0
Examples of successful and unsuccessful entrepreneurship of MUDRA Loan, Gramin banks, SISI and NSIC etc.,		
Skill Development Activities:		
1. List out the discovery and evaluation of viable business ideas for new venture creation.		

2. Practice critical talents and traits required for entrepreneurs such as problem solving, creativity, communication, business math, sales, and negotiation
3. List out practical issues in setting-up of different enterprises.
4. Analyze the impact of various Government schemes in promotion of entrepreneurs.
5. Any other activities, which are relevant to the course.

Text Books:

1. Entrepreneurship-Starting, Developing, and Management a new Enterprise- Hisrich and Peters-Irwin
2. Fayolle A (2007) Entrepreneurship and new value creation. Cambridge, Cambridge University Press
3. Hougard S. (2005) The business idea. Berlin, Springer
4. Lowe R & S Mariott (2006) Enterprise: Entrepreneurship & Innovation. Burlington, Butterworth Heinemann

Note: Latest edition of text books may be used.

**Fourth Semester B.Com.
Academic Year 2023-24**

Name of the Program: Bachelor of Commerce (B.Com.) Course Code: B.Com.4.1 Name of the Course: Advanced Corporate Accounting		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs
Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to <ul style="list-style-type: none"> a) Know the procedure of redemption of preference shares. b) Comprehend the different methods of Mergers and Acquisition of Companies c) Understand the process of internal reconstruction. d) Prepare the liquidator's final statement of accounts. e) Understand the recent developments in accounting and accounting standards. 		
Syllabus:		Hours
Module No. 1: Redemption of Preference Shares		10
Meaning – legal provisions – treatment regarding premium on redemption – creation of Capital Redemption Reserve Account – Fresh issue of shares – Arranging for cash balance for the purpose of redemption – minimum number of shares to be issued for redemption – issue of bonus shares – preparation of Balance sheet (Schedule III to Companies Act 2013) after redemption.		
Module No. 2: Mergers and Acquisition of Companies		16
Meaning of Amalgamation and Acquisition – Types of Amalgamation – Amalgamation in the nature of Merger – Amalgamation in the nature of Purchase – Methods of Calculation of Purchase Consideration (Ind AS 103), Net asset Method – Net Payment Method, Accounting for Amalgamation (Problems on pooling of interest method and purchase method) – Journal Entries and Ledger Accounts in the Books of Transferor Company and Journal Entries in the books of Transferee Company – Preparation of Balance Sheet after Merger. (Schedule III to Companies Act 2013).		
Module No. 3: Internal Reconstruction of Companies		10
Meaning of Capital Reduction; Objectives of Capital Reduction; Provisions for Reduction of Share Capital under Companies Act, 2013. Forms of Reduction. Accounting for Capital Reduction. Problems on passing Journal Entries, preparation of Capital Reduction Account and Balance sheet after reduction (Schedule III to Companies Act 2013).		
Module No. 4: Liquidation of Companies		12
Meaning of Liquidation, Modes of Winding up – Compulsory Winding up, Voluntary Winding up and winding up subject to Supervision by Court. Order of payments in the event of Liquidation. Liquidator's Statement of Account. Liquidator's remuneration. Problems on preparation of Liquidator's Statement of Account.		
Module No. 5: Recent Developments in Accounting and Accounting standards.		08

Human Resource Accounting – Environmental Accounting Discloser as per Global Reporting Initiative (GRI) Reporting of variables – Social Responsibility Accounting, Indian Accounting Standards-Meaning-objectives-Significance of Accounting standards in India- Process of setting Accounting Standards in India- List of Indian accounting standards. (IND AS).

Skill Development Activities:

1. List out legal provisions in respect of Redemption of Preference shares.
2. Calculation of Purchase consideration with imaginary figures.
3. List any five cases of amalgamation in the nature of merger or acquisition of Joint Stock Companies.
4. List out legal provisions in respect of internal reconstruction.
5. List out any five Indian Accounting Standards.
6. Any other activities, which are relevant to the course.

Text Books:

1. Arulanandam & Raman; Corporate Accounting-II, HPH
2. Anil Kumar, S. Rajesh Kumar, V. and Mariyappa, B. Advanced Corporate Accounting, HPH
3. Roadmap to IFRS and Indian Accounting Standards by CASHibarama Tripathy
4. Dr. Venkataraman, R. – Advanced Corporate Accounting
5. S.N. Maheswari, Financial Accounting, Vikas publishing
6. Soundarajan A & K. Venkataramana, Advanced Corporate Accounting, SHBP.
7. R. L. Gupta, Advanced Accountancy, Sultan Chand
8. K. K. Verma – Corporate Accounting.
9. Jain and Narang, Corporate Accounting.
10. Tulsian, Advanced Accounting,
11. Shukla and Grewal – Advanced Accountancy, Sultan Chand
12. Srinivas Putty, Advanced Corporate Accounting, HPH.

Note: Latest edition of text books may be used.

Name of the Program: Bachelor of Commerce (B.Com.)		
Course Code: B.Com.4.2		
Name of the Course: Costing Methods and Techniques		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	3+2 Hrs	56 Hrs
Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to		
<ul style="list-style-type: none"> a) The method of costing applicable in different industries. b) Determination of cost by applying different methods of costing. c) Prepare flexible and cash budget with imaginary figures d) Analyse the processes involved in standard costing. e) Familiarize with the Activity Based Costing and its applications. 		
Syllabus:		Hours
Module No.1: Job and Contract Costing		12
<p>Job Costing: Meaning, prerequisites, job costing procedure, Features, objectives, applications, advantages and disadvantages of Job costing, Job cost sheet- simple problems.</p> <p>Contract Costing: Meaning, features of contract costing, applications of contract costing, similarities and dissimilarities between job costing and contract costing, recording of contract costs, meaning of terms used in contract costing; treatment of profit on incomplete contracts-Problems.</p>		
Module No.2: Process and Service Costing		12
<p>Process costing: Meaning, features and applications of Process Costing; comparison between Job Costing and Process Costing, advantages and disadvantages of process costing; treatment of process losses and gains in cost accounts; preparation of process accounts.</p> <p>Service costing: Introduction to service costing; Application of Service costing; Service costing v/s product costing; Cost units for different service sectors; Service cost statement; Determination of costs for different service sectors - Transport services, hospitals and educational institutions-problems on preparation of service cost statements for these service sectors.</p>		
Module No.3: Activity Based Costing		10
<p>Introduction - Weakness of conventional costing system - concept of ABC - Characteristics of ABC - Kaplan and Cooper's Approach - cost drivers and cost pools - allocation of overheads under ABC -- Steps in the implementation of ABC - Benefits from adaptation of ABC system - difficulties faced by the industries in the successful implementation of ABC-Problems.</p>		
Module 4: Marginal Costing		12
<p>Meaning and Definition of marginal cost, marginal costing, features of marginal costing-terms used in marginal costing-P/V ratio, BEP, Margin of Safety, Angle of Incidence. Break Even Analysis assumptions and uses. Break Even Chart. (theory). Problems on CVP analysis.</p>		

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Module 5: Budgetary Control and Standard Costing	10
<p>Budgetary Control Introduction – Meaning & Definition of Budget and Budgetary Control–Objectives of Budgetary Control–essential requirements of budgetary control – advantages and disadvantages of budgetary control – Types of budgets- Functional Budgets-Cash budget, sales budget, purchase budget and production budget. Fixed and Flexible budgets - Problems on Flexible budget and Cash budget only.</p> <p>Standard Costing Introduction – Uses and limitations, variance analysis- Material variances, Labour variances and Overhead variances- problems on Material and Labour variances only.</p>	
<p>Skill Development Activities:</p> <ol style="list-style-type: none"> 1. Naming the appropriate method of costing with justification for each of the following Industries- Paper Mill, Printing, Sugar Mill, Rice Mill, Hospital, Oil Refinery, Pickle Manufacturing, KSRTC and Hotel. 2. List out the modern costing tools in accounting field. 3. Prepare flexible Budget and cash budget with imaginary figures 4. Narrate the steps involved in standard costing system. 5. Prepare a report, which explains the conditions that are necessary for the successful implementation of a JIT manufacturing system. 6. Explain ABC. Illustrate how ABC can be applied. <p>Note: Any other activities in addition to the above, which are relevant to the course.</p>	
<p>Reference Books:</p> <ol style="list-style-type: none"> 1. John K Shank and Vijaya Govindarajan; Strategic Cost Management; Free Press Publication; New York 2. SP Jain and KL Narang, Advanced Cost Accounting, Kalyani Publications, 3. Robert S Kaplan and Anthony A Atkinson, Advanced Management Accounting, PHI, New Delhi. 4. Shank and Govindarajan, Strategic Cost Management, Simon and Schuster, 36 New York. 5. Lin Thomas, Cases and Readings in Strategic Cost Management, McGraw Hill Publications, New York. 6. Mariyappa B Methods and Techniques of Costing., HPH. <p>Note: Latest edition of Reference books may be used.</p>	

Name of the Program: Bachelor of Commerce (B.Com.) Course Code: B.Com.4.3 Name of the Course: Business Regulatory Framework		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs	56 Hrs
Pedagogy: Classroom lecture, Case studies, Group discussion, Seminar & field work etc.,		
Course Outcomes: On successful completion of the course, the students will be able to <ol style="list-style-type: none"> Recognise the laws relating to Contracts and its application in business activities. Acquire knowledge on bailment and indemnification of goods in a contractual relationship and role of agents. Comprehend the rules for Sale of Goods and rights and duties of a buyer and a seller. Distinguish the partnership laws, its applicability and relevance. Rephrase the cyber law in the present context. 		
Syllabus:		Hours
Module No.1: Indian Contract Act, 1872		12
Introduction – Definition of Contract, Essentials of Valid Contract, Offer and acceptance, consideration, contractual capacity, free consent. Classification of Contract, Discharge of a contract, Breach of Contract and Remedies to Breach of Contract		
Module No.2: The Sale of Goods Act, 1930		10
Introduction - Definition of Contract of Sale, Essentials of Contract of Sale, Conditions and Warranties, Transfer of ownership in goods including sale by a non-owner and exceptions- Performance of contract of sale- Unpaid seller, rights of an unpaid seller against the goods and against the buyer		
Module No.3: Competition and Consumer Laws		12
The Competition Act 2002 – Objectives of Competition Act, Features of Competition Act, CAT, Offences and Penalties under the Act, Competition Commission of India. Consumer Protection Act 1986 – Definitions of the terms – Consumer, Consumer Dispute, Defect, Deficiency, Unfair Trade Practices, and Services, Rights of Consumer under the Act, Consumer Redressal Agencies – District Forum, State Commission and National Commission.		
Module No.4: Economic Laws		12
WTO patent rules – Indian Patent Act, 1970 – Meaning and Scope of Intellectual Property Rights (IPR), Procedure to get Patent for Inventions and Non-Inventions. FEMA 1999 – Objectives of FEMA, Salient Features of FEMA, Definition of Important Terms – Authorized Dealer, Currency- Foreign Currency, Foreign Exchange, Foreign Security.		
Module 5: Environment and Cyber Laws		10

Environment Protection Act 1986 – Objectives of the Act, Definitions of Important Terms – Environment, Environment Pollutant, Environment Pollution, Hazardous Substance and Occupier, Types of Pollution, Powers of Central Government to protect Environment in India.

Cyber Law: Definition, Introduction to Indian Cyber Law, Cyberspace and Cybersecurity.

Skill Development Activities:

1. Discuss the case of "Carlill vs Carbolic Smoke Ball Company" case
2. Discuss the case of "Mohori Bibee v/s Dharmodas Ghose".
3. Discuss any one case law relating to minor.
4. State the procedure for getting patent for 'inventions' and/or 'non-inventions'.
5. List at least 5 items which can be categorized as 'hazardous substance' according to Environment Protection Act.
6. List out any top upcoming jobs in cybersecurity and examine the skills required for the same.
7. Any other activities, which are relevant to the course.

Text Books:

1. M.C. Kuchhal, and Vivek Kuchhal, Business Law, Vikas Publishing House, New Delhi.
2. Avtar Singh, Business Law, Eastern Book Company, Lucknow.
3. Ravinder Kumar, Legal Aspects of Business, Cengage Learning
4. SN Maheshwari and SK Maheshwari, Business Law, National Publishing House, New Delhi.
5. Aggarwal SK, Business Law, Galgotia Publishers Company, New Delhi
6. Bhushan Kumar Goyal and Jain Kinneri, Business Laws, International Book House
7. Sushma Arora, Business Laws, Taxmann Publications.
8. Akhileshwar Pathak, Legal Aspects of Business, McGraw Hill Education, 6th Ed.
9. PCTulsian and BharatTulsian, Business Law, McGraw Hill Education
10. Sharma, J.P. and Sunaina Kanojia, Business Laws, Ane Books Pvt. Ltd., New Delhi
11. K.Rama Rao and Ravi S.P., Business Regulatory Framework., HPH
12. N.D. Kapoor, Business Laws, Sultan Chand Publications
13. .K.Aswathappa, Business Laws, HPH,
14. .Information Technology Act/Rules 2000, Taxmann Publications Pvt. Ltd.
15. Chanda. P.R, Business Laws, Galgotia Publishing Company

Note: Latest edition of text books may be used.

4.4 Constitution of India curriculum will be given by KSHIC

4.5 Sports/NCC/NSS/Others (If any) – as per concerned University

Name of the Program: Bachelor of Commerce (B.Com.) Course Code: B.Com.4.6 (OEC) Name of the Course: Business Ethics		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs
Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to <ol style="list-style-type: none"> a. Explain the concepts of business ethics and its approaches. b. Examine the business and organisational ethics in the present context. c. Analyse the ethical aspects in marketing and HR areas. d. Analyse the ethical aspects in finance and IT areas. e. Examine the impact of globalisation on business ethics. 		
Syllabus:		Hours
Module No. 1: Business Ethics		08
Introduction, Concepts and theories: Introduction, definitions, importance and need for Business ethics, Values and morals. Management and ethics, Normative Theories, – Gandhian Approach, Friedman’s Economic theory, Kant’s Deontological theory, Mill & Bentham’s Utilitarianism theory.		
Module No. 2: Business & Organisational Ethics		10
The Indian Business scene, Ethical Concerns, LPG & Global trends in business ethics, Business ethics rating in India. Organizations & Organisation culture, Types of Organization, Corporate code of ethics – Formulating, Advantages, implementation Professionalism and professional ethics code.		
Module No. 3: Ethical Aspects in Organization-I		08
Marketing ethics and Consumer ethics – Ethical issues in advertising, Criticisms in Marketing ethics, Ethics in HRM: Selection, Training and Development – Ethics at work place – Ethics in Performance Appraisal.		
Module No. 4: Ethical Aspects in Organization-II		08
Ethics in Finance: Insider trading - Ethical investment - Combating Frauds. Ethical issues in Information Technology: Information Security and Threats – Intellectual Property Rights – Cybercrime.		
Module No. 5: Globalization and Business Ethics		08
Growth of Global Corporations, Factors facilitating Globalisation, Impact of globalization on Indian corporate and social culture, Advantages and disadvantages of MNC’s to the Host Country, International codes of Business Conduct, Whistle blowing and its codes.		

Skill Development Activities:

1. The students may be asked to conduct the survey of any two organizations to study the ethical practices.
2. List out any five most ethical rating of Indian companies.
3. Collect the information on unethical practices in marketing and HR area.
4. Collect the information on unethical practices in finance and IT area.
5. Analyse and submit the report on the impact of globalization on Indian business houses in the context of ethical aspects.
6. Any other activities, which are relevant to the course.

Text Books:

1. Laura P Hartman, T, Perspectives in Business Ethics, Tata McGraw Hill.
2. B. H. Agalatti & R.P. Banerjee, Business Ethics – Concept & Practice, Nirali Publication.
3. R.P. Banerjee, Ethics in Business & Management, Himalaya Publication
4. Crane, Business Ethics, Pub. By Oxford Press
5. CSVMurthy, Business Ethics, Himalaya Publishing House

Note: Latest edition of textbooks may be used.

Name of the Program: Bachelor of Commerce (B.Com.) Course Code: B.Com.4.6 (OEC) Name of the Course: Corporate Governance		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs	42 Hrs
Pedagogy: Classroom lectures, Case studies, Group discussion & Seminar etc.,		
Course Outcomes: On successful completion of the course, the students will be able to <ul style="list-style-type: none"> a) Identify the importance of corporate governance. b) Know the rights, duties and responsibilities of Directors. c) Analyse the legal & regulatory framework of corporate governance. d) Outline the importance and role of board committee. e) Understand the major expert committees' Reports on corporate governance. 		
Syllabus:		Hours
Module No.1: Corporate Governance		10
Introduction, Its importance, Principles of corporate governance, OECD Principles of corporate governance, Theories of corporate governance - Agency theory and stewardship theory, Models of corporate governance around the world, Need for good corporate governance - Evolution of Corporate Governance - Ancient and Modern Concept - Concept of Corporate Governance, Generation of Value from Performance - Principles of Corporate Governance.		
Module No.2: Corporate and Board Management		10
Corporate Business Ownership Structure - Board of Directors - Role, Composition, Systems and Procedures - Fiduciary relationship - Types of Directors - Promoter/Nominee/Shareholder/Independent - Rights, Duties and Responsibilities of Directors; Role of Directors and Executives - Responsibility for Leadership, Harmony between Directors and Executives - Training of Directors - need, objective, methodology - Scope and Responsibilities and competencies for directors - Executive Management Process, Executive Remuneration - Functional Committees of Board - Rights and Relationship of Shareholders and Other Stakeholders.		
Module No.3: Legal and Regulatory Framework of Corporate Governance		08
Need for Legislation of Corporate Governance - Legislative Provisions of Corporate Governance in Companies Act 1956, Securities (Contracts and Regulations) Act, 1956 (SCRA), Depositories Act 1996, Securities and Exchange Board of India Act 1992, Listing Agreement, Banking Regulation Act, 1949 and Other Corporate Laws - Legal Provisions relating to Investor Protection.		
Module No.4: Board Committees and Role of Professionals		08

Board Committees - Audit Committee, Remuneration Committee, Shareholders' Grievance Committee, other committees - Need, Functions and Advantages of Committee Management - Constitution and Scope of Board Committees - Board Committees' Charter - Terms of Reference and Accountability and Performance Appraisals - Attendance and participation in committee meetings - Independence of Members of Board Committees - Disclosures in Annual Report; Integrity of Financial Reporting Systems - Role of Professionals in Board Committees - Role of Company Secretaries in compliance of Corporate Governance.

Module No.5: Corporate Governance - Codes and Practices

06

Introduction - Major Expert Committees' Reports of India - Study of Codes of Corporate Governance - Best Practices of Corporate Governance - Value Creation through Corporate Governance - Corporate Governance Ratings.

Skill Development Activities:

1. Collect the annual reports of any two companies, find out the corporate governance aspects in the reports.
2. Collect any two companies Board of Directors names and find out their nature of directorship.
3. Prepare report on the applicability of different models of Corporate Governance.
4. Critically compare the recommendations of various corporate governance committee.
5. Any other activities, which are relevant to the course.

Text Books:

1. Bairs N. and D Band, Winning Ways through Corporate Governance, Macmillan London.
2. Charkham J, Keeping Good Company: A Study of Corporate Governance in Five Countries, Oxford University Press, London.
3. Subhash Chandra Das, Corporate Governance in India - An Evaluation (Third edition), PHI Learning Private Limited.
4. Clark T. and E Monk House, Rethinking the Company, Pitman, London.
5. Fernando A.C, Corporate Governance, Pearson Education.
6. Prentice D.D. and PRJ Holland, Contemporary Issues in Governance, Clarendon Press.
7. Report of the Cadbury Committee on Financial Aspects of Corporate Governance, London Stock Exchange, London.
8. Report on Corporate Governance, Confederation of India Industries and Bombay.

Note: Latest edition of text books may be used.

ದೂರವಾಣಿ ಸಂಖ್ಯೆ : 2419677/2419361
ಫ್ಯಾಕ್ಸ್ : 0821-2419363/2419301

e-mail : registrar@uni-mysore.ac.in
www.uni-mysore.ac.in

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸ್ಥಾಪನೆ : 1916

ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಕಾರ್ಯಸೌಧ
ಕ್ವಾರ್ಟರ್ ಭವನ, ಮೈಸೂರು-570005
ದಿನಾಂಕ : 29-12-2022

ಸಂಖ್ಯೆ:ಎಸಿ.6/152/2020-21

ಅಧಿಸೂಚನೆ

ವಿಷಯ:- SEC-Artificial Intelligence ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮದ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ:- 1. ಈ ಕಛೇರಿ ಅಧಿಸೂಚನೆ ಸಂಖ್ಯೆ: ಎಸಿ2(ಎಸ್)/151/2020-21 ದಿನಾಂಕ 09-12-2022

ಕರ್ನಾಟಕ ಸರ್ಕಾರ ಉನ್ನತ ಶಿಕ್ಷಣ ಪರಿಷತ್, ಬೆಂಗಳೂರು ಇವರು ಸ್ನಾತಕ ಪದವಿ ಕೋರ್ಸಿನ 3 ಮತ್ತು 4 ನೇ ಸೆಮಿಸ್ಟರ್‌ನ ವಿದ್ಯಾರ್ಥಿಗಳಿಗಾಗಿ SEC ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಒಂದಾದ Artificial Intelligence ಪತ್ರಿಕೆಯ (ಎರಡು ಕ್ರೆಡಿಟ್‌ಗಳಿಗೆ) ಪಠ್ಯಕ್ರಮವನ್ನು ವಿಶ್ವವಿದ್ಯಾನಿಲಯಕ್ಕೆ ಶಿಫಾರಸ್ಸು ಮಾಡಿ ಕಳುಹಿಸಿರುತ್ತಾರೆ.

ಉಲ್ಲೇಖ (1)ರ ಅಧಿಸೂಚನೆಯಲ್ಲಿರುವ Model Programme Structure ನಲ್ಲಿರುವಂತೆ, ವಿದ್ಯಾರ್ಥಿಗಳು ಅಭ್ಯಸಿಸಬೇಕಿರುವುದರಿಂದ, ನಿಕಾಯ ಮತ್ತು ಶೈಕ್ಷಣಿಕ ಮಂಡಳಿಯ ಅನುಮೋದನೆಯನ್ನು ಕಾಯ್ದಿರಿಸಿ, ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಅನುಮೋದನೆಯ ಮೇರೆಗೆ ಈ ಅಧಿಸೂಚನೆ ಹೊರಡಿಸಿದೆ.

SEC- Artificial Intelligence ಸ್ನಾತಕ ಪದವಿಯ ಪಠ್ಯಕ್ರಮ ಮತ್ತು ಪರೀಕ್ಷಾ ವಿಧಾನಗಳನ್ನು www.uni-mysore.ac.in ಇಲ್ಲಿ ಅಳವಡಿಸಿದ್ದು, ಸಂಬಂಧಪಟ್ಟವರು ಇಲ್ಲಿಂದ ಪಡೆಯಬಹುದಾಗಿದೆ.

ಉಪಕುಲಸಚಿವರು (ಶೈಕ್ಷಣಿಕ)
ಉಪ ಕುಲಸಚಿವರು. (ಶೈಕ್ಷಣಿಕ)
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಮೈಸೂರು-570 005

ಗೆ:-

1. ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಎಲ್ಲಾ ಘಟಕ/ಸಂಯೋಜಿತ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳಿಗೆ.
2. ಕುಲಸಚಿವರು (ಪರೀಕ್ಷಾಂಗ), ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.
3. ನಿರ್ದೇಶಕರು, ಕಾಲೇಜು ಅಭಿವೃದ್ಧಿ ಮಂಡಳಿ, ಮೌಲ್ಯಭವನ ಕಟ್ಟಡ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು.
4. ನಿರ್ದೇಶಕರು, ಐ.ಸಿ.ಡಿ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು- ಇವರಿಗೆ ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಲಾಗಿದೆ.
5. ಕುಲಪತಿಗಳು/ವಿಶೇಷ ಅಧಿಕಾರಿಗಳು/ ಆಪ್ತ ಸಹಾಯಕರು/ಕುಲಸಚಿವರು/ ಉಪಕುಲಸಚಿವರು/ ಸಹಾಯಕ ಕುಲಸಚಿವರು/ಅಧೀಕ್ಷಕರು, ಆಡಳಿತ ವಿಭಾಗ/ಸಾಮಾನ್ಯ/ಪಿಡಿಐ/ ಪ್ರಾಧಿಕಾರ ಮತ್ತು ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.
6. ಕಾರ್ಯನಿರ್ವಾಹಕರು, ಆಡಳಿತಶಾಖೆಯ, AC2(S)/ AC-3/ AC-7(a)/ AC-9, ಶೈಕ್ಷಣಿಕ ವಿಭಾಗ, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.- ಈ ಸಂಬಂಧ ಮುಂದಿನ ಕ್ರಮವಹಿಸುವಂತೆ ತಿಳಿಸಲಾಗಿದೆ.
7. ರಕ್ಷಾ ಕಡತಕ್ಕೆ.

SVN

Skill Enhancement Course: SEC for B.Sc. & other Subject Students

Semester: III/IV

Course Title: Artificial Intelligence	Course Credits: 2
Total Contact Hours: 13 hours of theory and 26 hours of practical	Duration of ESA: 01 Hour
Formative Assessment Marks: 20 marks	Summative Assessment Marks: 30 marks

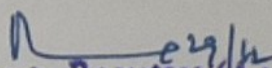
Course Outcomes (COs):

At the end of the course, students will be able to:

- Appraise the theory of Artificial intelligence and list the significance of AI.
- Discuss the various components that are involved in solving an AI problem.
- Illustrate the working of AI Algorithms in the given contrast.
- Analyze the various knowledge representation schemes, Reasoning and Learning techniques of AI.
- Apply the AI concepts to build an expert system to solve the real-world problems.

Course Content (Artificial Intelligence)

	Details of topic	Duration
Course – 1 - Azure AI Fundamentals (AI-900)	AI-900 pathway consists of 5 courses and 2 reading material: <ol style="list-style-type: none"> i. Introduction to AI on Azure ii. Use visual tools to create machine learning models with Azure Machine Learning iii. Explore computer vision in Microsoft Azure iv. Explore natural language processing v. Explore conversational AI vi. Tune Model Hyperparameters - Azure Machine Learning (Reading) vii. Neural Network Regression: Module Reference - Azure Machine Learning (Reading) 	05 hours
Practical	<ol style="list-style-type: none"> 1. Prepare the data 2. Model the data 3. Visualize the data 4. Analyse the data 5. Deploy and maintain deliverables 	13 hours


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Course – 2 - Data Analyst Associate (DA-100)	DA-100 pathway consists of 5 courses and 2 reading material: 1. Get started with Microsoft data analytics 2. Prepare data for analysis 3. Model data in Power BI 4. Visualize data in Power BI 5. Data analysis in Power BI 6. Manage workspaces and datasets in Power BI 7. Key Influencers Visualizations Tutorial - Power BI 8. Smart Narratives Tutorial - Power BI Microsoft Docs	08 hours
Practical	1. Describe Artificial Intelligence workloads and considerations 2. Describe fundamental principles of machine learning on Azure 3. Describe features of computer vision workloads on Azure 4. Describe features of Natural Language Processing (NLP) workloads on Azure	13 hours

References to learning resources:

1. The learning resources made available for the course titled “Azure AI Fundamentals (AI-900) and Data Analyst Associate (DA-100).” on Future Skills Prime Platform of NASSCOM.

Pedagogy

Flipped classroom pedagogy is recommended for the delivery of this course.

For every class:

1. All the faculty who takes this class should go for a Faculty Development Program on these before starting the session.
2. Faculty needs to introduce this course to the students then students need to start learning from Future Skills PRIME platform.
3. Faculty also needs to explain the course outcomes and needs of the course and why it is needed for the students.
4. Then students need to start learning online after registering on the platform.
5. Classroom activities are designed around the topic of the session towards developing better understanding, clearing doubts and discussions of high order thinking skills like application, analysis, evaluation, and design.
6. Every theory class ends with announcement of exercise for practical activity of the week.

Exercises:

Practical Exercises	Weightage in marks
After each chapter students' needs to complete exercises based on the learning in Azure environment.	No Weightage (But students need to complete it to move to next chapter) .

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Assessment:

Formative Assessment	
Assessment Occasion	Weightage in Marks
1. Summative Assessment: After completion of both the courses, the student can optionally give Assessment for each of the courses on Future Skills Prime platform. Students will have two attempts and those who score at least 50% marks per course will get certificate from NASSCOM-MeitY.	This assessment may be given 50% weight in computing the final grade of the students.

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UNIVERSITY OF MYSORE
Estd. 1916



Vishwavidyanilaya Karyasoudha
Crawford Hall, Mysuru- 570 005

No.AC6/304/2022-23

Dated: 04-10-2023

Notification

Sub:- Revised Syllabus and Scheme of Examination of B.B.A. Programme (III & IV Semester) with effect from the academic year 2023-24.

- Ref:-** 1.This office circular No: AC2(S)/151/2020-21 dated 06-09-2023.
2.Decision of BOS in Business Administration meeting held on 15-09-2023.
3. Vice Chancellor approved dated 30-09-2023.

The Board of Studies in Business Administration (CB) which met on 15-09-2023 has resolved to recommended and approved the revised syllabus and scheme of Examinations of B.B.A. Programme (III & IV semester) with effect from the Academic year 2023-24.

Pending approval of the Faculty of Commerce and Academic Council meetings the above said syllabus and Scheme of Examinations are hereby notified.

The syllabus and scheme of Examinations contents may be downloaded from the University website i.e., www.uni-mysore.ac.in

DRAFT APPROVED BY THE REGISTRAR

Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To;

1. All the Principal of affiliated Colleges of University of Mysore, Mysore. Those who are running B.B.A. Courses.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Business Administration (BIMS), Manasagangothri, Mysore.
4. The Dean, Faculty of Commerce, DOS in Commerce, Manasagangothri, Mysuru.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, University of Mysore, Mysore.
7. Director, College Development Council, Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.

Curriculum Framework for Undergraduate Program of University of Mysore

Bachelor of Business Administration (BBA)

**Revised NEP Syllabus for 3rd & 4th Semester from
the Academic Year 2023-24**

Semester III (BBA)								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	SEE	CIE	Total Marks	Credits
19	Lang.1.1	Language - I	AECC	3+1+0	60	40	100	3
20	Lang.1.2	Language - II	AECC	3+1+0	60	40	100	3
21	BBA.3.1	Cost Accounting	DSC	3+0+2	60	40	100	4
22	BBA.3.2	Organizational Behavior	DSC	4+0+0	60	40	100	4
23	BBA.3.3	Statistics for Business Decisions	DSC	3+0+2	60	40	100	4
24	BBA.3.4	Artificial Intelligence	SEC	1+0+2	30	20	50	2
24	BBA.3.5	Sports	SEC-VB	0+0+2	-	25	25	1
25	BBA.3.6	NSS/NCC/ Any Other	SEC-VB	0+0+2	-	25	25	1
26	BBA.3.7	Social Media Marketing/ Rural Marketing	OEC	3+0+0	60	40	100	3
Sub –Total (C)					390	310	700	25

Semester IV (BBA)								
Sl. No.	Course Code	Title of the Course	Category of Courses	Teaching Hours per Week (L + T + P)	SEE	CIE	Total Marks	Credits
23	Lang.1.1	Language - I	AECC	3+1+0	60	40	100	3
24	Lang.1.2	Language - II	AECC	3+1+0	60	40	100	3
25	BBA.4.1	Management Accounting	DSC	3+0+2	60	40	100	4
26	BBA.4.2	Business Analytics / Financial Markets & Services	DSC	4+0+0	60	40	100	4
27	BBA.4.3	Financial Management	DSC	3+0+2	60	40	100	4
28	BBA.4.4	Constitution of India	AECC	2+0+0	30	20	50	2
29	BBA.4.5	Sports	SEC-VB	0+0+2	-	25	25	1
30	BBA.4.6	NCC/NSS/Any others	SEC-VB	0+0+2	-	25	25	1
31	BBA.4.7	Business Leadership Skills/Personal Wealth Management/Financial Literacy and Investment Awareness	OEC	3+0+0	60	40	100	3
Sub –Total (D)					390	310	700	25

Notes:

- **One Hour of Lecture is equal to 1 Credit.**
- **One Hour of Tutorial is equal to 1 Credit (Except Languages).**
- **Two Hours of Practical is equal to 1 Credit**

Acronyms Expanded

- **AECC** : **Ability Enhancement Compulsory Course**
- **DSC ©** : **Discipline Specific Core (Course)**
- **SEC-SB/VB** : **Skill Enhancement Course-Skill Based/Value Based**
- **OEC** : **Open Elective Course**
- **DSE** : **Discipline Specific Elective**
- **SEE** : **Semester End Examination**
- **CIE** : **Continuous Internal Evaluation**
- **L+T+P** : **Lecture + Tutorial + Practical(s)**

Note: Practical Classes may be conducted in the Business Lab or in Computer Lab or in Class room depending on the requirement. One batch of students should not exceed half (i.e., 30 or less than 30 students) of the number of students in each class/section. 2 Hours of Practical Class is equal to 1 Hour of Teaching, however, whenever it is conducted for the entire class (i.e., more than 30 students) 2 Hours of Practical Class is equal to 2 Hours of Teaching.

Name of the Program: BBA		
Course Code: BBA 3.1		
Name of the Course: COST ACCOUNTING		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the students will -		
<ul style="list-style-type: none"> • Be able to demonstrate an understanding of the elements of cost and prepare a cost sheet. • Be able to prepare material related documents, understand the management of stores and issue procedures. • Develop the ability to calculate Employee costs. • Able to classify, allocate apportion overheads and calculate overhead absorption rates. • Understand and reconcile cost and financial accounts. 		
Syllabus:		Hours
Module No. 1: Introduction to Cost Accounting		12
<p>Introduction: Meaning, Objectives, Uses of Cost Accounting, Functions of Cost Accounting, Difference between Cost Accounting and Financial Accounting; Advantages and Disadvantages of Cost Accounting; Various elements of Cost; Cost Object, Cost Unit, Cost Driver, Responsibility Centers; Cost Reduction and Cost Control; Methods and Techniques of Costing (Meanings only).</p> <p>Cost Sheet: Meaning and Cost Heads in a Cost Sheet, Presentation of Cost information in Cost Sheet/Statement- Problems on Cost Sheet, Tenders and Quotations.</p>		
Module No. 2: Materials Cost		12
<p>Materials: Meaning, Importance and Types of Materials - Direct and Indirect Material.</p> <p>Materials Storage and Records: Duties of Storekeeper, Store records- (Bin cards, Stores Ledger, Stock Control Cards);</p> <p>Materials Issues and Valuation: Procedure for material issues, Documents used in material issues- (Material Requisition Note, Material Transfer Note, Materials Return Note); Valuation of material issues- preparation of Stores Ledger/ Account - FIFO, LIFO, Simple Average Price and Weighted Average Price Methods- problems.</p>		

Inventory Control: Inventory control techniques and determination of various stock levels- Problems on Level Setting and Computation of EOQ only; ABC Analysis, FSN Inventory, VED Inventory, HML Inventory, JIT Inventory Management technique, Perpetual Inventory system (Concepts only).	
Module No. 3: Employee Cost	10
<p>Employee Cost: Meaning, Components, Classification; Attendance Procedure- Timekeeping and Time Booking, Idle Time- Causes and treatment of Normal and Abnormal Idle Time, Overtime- Causes and treatment (Theory only);</p> <p>Methods of Remuneration (Payment of Wages and Incentives) Problems on calculation of earnings under Time Rate (Straight time rate, Halsey and Rowan Methods) and Piece rate systems (Straight piece rate and Taylor's differential piece rate).</p>	
Module No. 4: Overheads	12
<p>Overheads: Meaning and Classification of Overheads; Accounting and Control of Manufacturing Overheads: Estimation and Collection, Cost allocation, Apportionment, Re-apportionment and Absorption of Manufacturing Overheads; Problems on Primary and Secondary distribution and Secondary distribution using Reciprocal Service Methods only (Repeated Distribution Method and Simultaneous Equation Method); Accounting and Control of Administrative, Selling and Distribution overheads; Absorption of overheads: Meaning and Methods of Absorption of overheads; Problems on Machine hour rate</p>	
Module No. 5: Reconciliation of Cost and Financial Accounts	10
<p>Reasons for differences in Profits under Financial and Cost Accounts; Procedure for Reconciliation –Ascertainment of Profits as per Financial Accounts and Cost Accounts and Reconciliation of Profits of both sets of Accounts – Preparation of Reconciliation Statement – Problems.</p>	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • Prepare a Cost Sheet with imaginary figures. • List the documents required in Inventory Management. • Demonstrate the valuation of inventory using any one method of pricing material issues. • Calculate the amount of Wages under Halsey / Rowan Plans, using imaginary data. 	

Text Books:

1. Jain and Narang, Cost Accounting, Kalyani Publication House.
2. M.N Arora, Cost Accounting , HPH
3. N.K. Prasad, Cost Accounting, Books Syndicate Pvt. Ltd.
4. Dr. V Rajeshkumar, Dr. R K Srikanth, Cost Accounting, MH India
5. P V Ratnam, Cost Accounting, Kitab Mahal
6. P C Tulsian, Cost Accounting, MHE India
7. Nigam & Sharma, Cost Accounting, HPH
8. Dr. B. Mariyappa, Cost Accounting, HPH
9. Khanna, Ahuja & Pandey, Practical Costing, S Chand & Co. Ltd.
10. B.S. Raman, Cost Accounting, United Publisher
11. Ravi M. Kishore, Cost Management, Taxmann

Note: Latest edition of text books may be used.

Name of the Program: BBA		
Course Code: BBA 3.2		
Name of the Course: ORGANIZATIONAL BEHAVIOUR		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, Role Plays and Case study method.		
Course Outcomes: On successful completion of the course, the Students will:		
<ul style="list-style-type: none"> • Demonstrate an understanding of the role of OB in business organization. • Demonstrate an ability to understand individual and group behavior in an organization. • Be able to explain the effectiveness of organizational change and development of organisation. • Demonstrate an understanding of the process of organizational development and OD Interventions. 		
Syllabus:		Hours
Module No. 1: Organizational Behaviour and Foundations Of Individual Behaviour		16
Organization Behaviour - Meaning, Definition of OB, Importance of OB, Foundations of OB. Individual behaviour - Personal Factors, Environmental Factors, organization systems and resources. Personality -Meaning, Determinants and Traits of Personality. Perception - Meaning, Factors influencing perception, Perceptual Process, Perceptual Errors.		
Module No. 2: Group and Team Dynamics		10
Group Dynamics -Meaning, Types of Group, Development of Groups- Stages of Group Development, Determinants of Group Behaviour. Team Dynamics - Meaning, Types of Teams: Conflict-sources of conflict and ways of resolving conflict.		
Module No. 3: Change Management		8
Introduction to Change Management: Meaning of Change, Importance and Nature of Planned Change, Factors Influencing Change - Resistance to Change, Overcoming Resistance to Change.		
Module No. 4: Organizational Development		12
Organizational Development: Meaning and Nature of Organizational Development (OD), Process of Organizational Development: Overview of Entering and Contracting, Diagnosing: Meaning of Diagnosing, Comprehensive Model for Diagnosing Organizational Systems (Organizational Level, Group Level and Individual Level).		

Module No. 5: OD Interventions	10
<p>Designing Effective OD Interventions: How to Design Effective Interventions, Overview of OD interventions - Human Process Interventions, Techno Structural Interventions, HRM Interventions and Strategic Change Interventions, Conditions for optimal success of OD.</p>	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • Two cases on the above syllabus should be analyzed and record in the skill development • Draw Blake and Mouton managerial grid • List the Personality Traits of Successful Business Leaders. <p>SAMPLE CASES FOR REFERENCE:</p> <p>Module 1</p> <p>For business continuity, during Covid-19, XYZ organisation has encouraged the employees to Work From Home (WFH). But Post lock down, when the employees are called back to office, they resisted. Majority of the employees are preferring WFH. Few employees have resigned the job too.</p> <p>If you are the manager of XYZ, can you justify the employee behaviour? Draw up a list of all the strategies you incorporate in bringing employees back to office</p> <p>Module 2</p> <p>You are heading a global team, which consist of employees from various culture and background. The diversity and lack of inclusion is negatively impacting the functioning of this heterogenous team. Dysfunctional conflict is common among the members.</p> <p>Chart a plan of action to resolve the conflict within the global team. Suggest remedies for a long-term solution</p> <p>Module 3</p> <p>The ABC Bank is planning to introduce Finacle digital banking platform for competitive advantage. Majority of the employees have more than 15 years work experience in the bank. They do not want to change from their comfort zone.</p> <p>As a manager, design the methods of overcoming employee resistance to change in order to achieve the objectives of ABC Bank in the best possible manner.</p> <p>Module 4</p> <p>Owing to the rapid expansion, the XYZ start-up's transition from a "one-man show' to a 'professionally run" set-up was initiated. The aim was to develop the strengths of each member of the team and to channel them towards autonomous decision making. Chart</p>	

the steps in the OD process that can be followed by XYZ firm. Identify the four target of change - Human Resources, Functional Resources, Technological Capabilities and Organizational Capabilities.

Module 5

Employee retention is a critical issue in your E-Commerce organisation. The talented employees are moving to competitive firms. Chart an organizational development intervention plan to maximize effectiveness and minimize organizational strain.

Text Books:

1. Fred Luthans, Organizational Behaviour. McGraw Hill
2. Robbins, Organizational Behaviour, International Book House.
3. John W. Newstrom and Kieth Davis, Organizational Behaviour, McGraw Hill.
4. K. Aswathappa, Organizational Behaviour, HPH.
5. Appanniah and, Management and Behavioural Process, HPH
6. Sharma R.K and Gupta S.K, Management and Behaviour Process, Kalyani Publishers.
7. Rekha and Vibha – Organizational Behavioural, VBH.
8. P.G. Aquinas Organizational Behaviour, Excel Books.
9. M. Gangadhar. V.S.P.Rao and P.S.Narayan, Organizational Behaviour

Note: Latest edition of text books may be used.

Name of the Program: BBA		
Course Code: BBA 3.3		
Name of the Course: STATISTICS FOR BUSINESS DECISIONS		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students will be able		
<ul style="list-style-type: none"> • To understand the basic concepts in statistics. • To classify and construct statistical tables. • To understand and construct various measures of central tendency, dispersion and skewness. • To apply correlation and regression for data analysis. 		
Syllabus:		Hours
Module No. 1: Introduction to Statistics		12
<p>Introduction – Meaning, Functions and Uses of Statistics; Collection of Data - Techniques of Data Collection – Census Technique and Sampling Technique (Concepts). Classification: Meaning, and Methods of Classification of Data, Tabulation: Meaning, Parts of a Table – Simple problems on Tabulation; Diagrammatic Presentation: Bar Diagrams – Simple Bars; Two Dimensional Diagrams – Pie Diagram.</p>		
Module No. 2: Measures of Central Tendency and Dispersion		14
<p>Measures of Central Tendency: Calculation of Arithmetic Mean, Median and Mode for Individual, Discrete and Continuous Series – Problems; Empirical relation between Mean, Median and Mode.</p> <p>Measures of Dispersion: Absolute and Relative measures of dispersion - Standard Deviation in Individual, Discrete and Continuous Series – Problems</p> <p>Measures of Skewness: Calculation of Karl Pearson’s Co-efficient of Skewness (Uni-modal) – Problems.</p>		
Module No. 3: Correlation and Regression Analysis		10
<p>Correlation Analysis - Meaning, Types of Correlation, Calculation of Karl Pearson’s Coefficient of Correlation, Computation of Probable Error, Regression Analysis – Concept of Regression, Regression equations- Problems (Individual Series only).</p>		

Module No. 4: Time Series Analysis	12
Meaning, Components, fitting a straight-line trend using Least Square Method (Problems where $\Sigma X=0$ only), calculation and estimation of trend values.	
Module No. 5: Index Numbers	12
Index number, Construction of Index number, Methods of Index number - simple aggregate method, Weighted method - Fishers Ideal Index Number-Problems. Tests of Adequacy (Unit test, TRT, FRT, Circular test). Consumer Price Index Number-Problems.	
Skill Developments Activities:	
<p>a) Data Visualization practical session Using Tableau/Power BI.</p> <p>b) Execute Average, Variance, Standard Deviation, CV, Covariance using Excel.</p> <p>c) Execute and Analyse Regression Model using Excel,</p> <p>d) Practical session on Time series models using GRETl</p> <p>e) Collect past years' Indian consumer price index data (as of the current base year) and analyse its impact on any macroeconomic indicator.</p>	
Text Books:	
<ol style="list-style-type: none"> 1. S P Gupta: Statistical Methods- Sultan Chand 2. Dr. B N Gupta: Statistics, Sahithya Bhavan 3. S.C Gupta: Business Statistics, HPH 4. N.V.R Naidu: Operation Research I.K. International Publishers 5. Elhance: Statistical Methods, Kitab Mahal 6. Sanchethi and Kapoor: Business Mathematics, Sultan Chand 7. Veerachamy: Operation Research I.K. International Publishers 8. S. Jayashankar: Quantitative Techniques for Management 9. D.P Apte; Statistical Tools for Managers 10. Chikoddi & Satya Prasad: Quantitative Analysis for Business Decision, HPH 11. Dr. Alice Mani: Quantitative Analysis for Business Decisions - I, SBH 	
Note: Latest edition of text books may be used.	

Name of the Program: BBA		
Course Code: BBA 3.5		
Name of the Course: SOCIAL MEDIA MARKETING (OEC)		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Case study method.		
Course Outcomes: On successful completion of the course, the Students will able to:		
<ul style="list-style-type: none"> • Understand social media marketing goals for successful online campaigns. • Analyze the effective social media marketing strategies for various types of industries and businesses. • Design social media content and create strategies to optimize the content's reach to the target audience. • Appraise the reach and track progress in achieving social media objectives with a variety of measurement tools and metrics. • Design a suitable social media campaign for the business goals. 		
Syllabus:		Hours
Module No. 1: Social Media Introduction		08
Introduction to social media, how to build a successful Social Media Strategy, Goal setting, Overview of Global E-Marketing Issues, Country and Market Opportunity Analysis, User engagement on social networks; Social advertising; Social, media analytics; Impact of online reputation; Social Technology and its marketing influence in India.		
Module No. 2: Facebook -Instagram marketing		10
Exploring the use of a Facebook page, Facebook Ad campaign, Facebook groups, Hashtags, Instagram, creating automation for Instagram, Audience Insights, page Insights, exploring the various IG content types, setting a theme and flow on Instagram, and generating Leads.		
Module No. 3: Twitter Marketing		08
Creating a Twitter account, optimizing a page, content types, posting contents, Integrating a personal brand on Twitter, Twitter Analytics & Ads, post assistants and automation for Twitter.		
Module No. 4: YouTube marketing		08
Youtube marketing, creating a youtube channel, posting content, youtube analytics, Google Pages for YouTube Channels, Video Flow, Verify Channel, Webmaster Tool – Adding Asset.		

Module No. 5: Search Engine Optimization-Recent trends and challenges	08
Search Engine Optimisation (SEO) Introduction, Understanding SEO, User Insights, Benefits and Challenges, Content Marketing, Traditional Media vs Social Media, recent trends and challenges in Social Media marketing.	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> a) Prepare Facebook Page in your name. b) Open a YouTube channel. c) Create a blog and write an article on Climate change. d) Create a search engine optimization (SEO) dashboard. 	
<p>Text Books:</p> <ul style="list-style-type: none"> • Annmarie Hanlon (2022), Digital Marketing Strategic Planning & Integration, 2nd Edition, SAGE Publications Ltd. • Matt Golden (2022), Social Media Marketing, 1st Edition, Bravex Publications. • Simon Kingsnorth (2022), The Digital Marketing Handbook: Deliver Powerful Digital Campaigns, 1st Edition, Kogan Page. • Melissa Barker, Donald I. Barker, Nicholas F. Bormann and Debra Zahay (2016), Social Media Marketing: A Strategic Approach, 2nd Edition, Cengage Learning. • Tracy L. Tuten and Michael R. Solomon, (2016), Social Media Marketing, 2nd Edition, Sage Publications India Private Limited. <p>Note: Latest edition of text books may be used.</p>	

Name of the Program: BBA		
Course Code: BBA 3.5		
Name of the Course: RURAL MARKETING (OEC)		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Case study method.		
Course Outcomes: On successful completion of the course, the Students will demonstrate		
<ul style="list-style-type: none"> • Describe the importance and application of various concepts of rural marketing. • demonstrate the appropriate selection of the segmentation, targeting and positioning strategies along with the environmental factors that influence rural consumers' buying behaviour. • Design a Pricing Strategy that suits the characteristics of rural products and the stage in the product life cycle. • Formulate the appropriate marketing communication and rural distribution channel plans to promote and deliver the rural products. • Appraise the recent trends in Rural marketing and the application of digital technology in rural marketing. 		
Syllabus:		Hours
Module No. 1: Introduction to Rural Marketing		08
Nature and scope of rural marketing, rural vs urban markets, concepts and classification of rural markets, rural marketing environment, rise of rural consumerism.		
Module No. 2: Rural Consumer Behaviour		06
Consumer buying Behaviour in rural markets, factors affecting consumer behaviour. Market segmentation – Bases for segmenting rural consumer markets.		
Module No. 3: Rural Product and Pricing Strategy		08
Rural product, Rural product classification, Product Life Cycle, Product Life Cycle strategies in rural markets, New Product Development in rural markets, Branding for rural markets. Pricing for rural markets – Factors and strategies.		
Module No. 4: Rural Distribution and Communication Strategy		10
Wholesaling and retailing in the rural market, rural mobile traders, rural distribution models- FMCG companies, durable companies, Service organizations, emerging distribution models.		

Rural communication strategy: challenges in rural Communication, creating promotion mix for rural audiences - advertisement, sales promotion, publicity.	
Module No. 5: Trends in Rural Marketing	10
Digitizing rural India, online marketing reach in the rural market, recent trends in packing, labelling, grading, transporting, order processing, payment methods, storage and warehousing. Corporate Farming -Meaning Only.	
Include live cases (ITC E-Choupal, TARAhatt, EID Parry's Indiagriline)	
Skill Developments Activities:	
<ul style="list-style-type: none"> a) Prepare a Product life cycle for a Rural product b) Select a Rural Product and conduct a Consumer Satisfaction Survey c) Prepare an advertisement copy for a rural product d) Visit an APMC Yard/Mandi's and prepare a report on any one Agri product pricing. 	
Text Books:	
<ul style="list-style-type: none"> • Debarun Chakrabaorty and Soumya Kanti Dhara, et al. (2021), Rural Marketing in India: Texts and Cases, 1st Edition Atlantic Publishers and Distributors Pvt Ltd • Acharya SS and Agarwal NL (2019), Agricultural Marketing in India, 6th Edition, Oxford & IBH Publishing Co Pvt Ltd. • Dinesh Kumar and Punam Gupta (2019), Rural Marketing), 1st Edition, SAGE Publications India Pvt Ltd. • C. G. Krishnamacharyulu (2010), Rural Marketing: Text and Cases, 2nd Edition, Pearson India Education Services Pvt Ltd. • T.P.Gopalaswamy (2009) Rural Marketing-Environment, Problems and Strategies, 3rd Edition, Vikas Publishing House. 	
Note: Latest edition of text books may be used.	

Name of the Program: BBA		
Course Code: BBA 4.1		
Name of the Course: MANAGEMENT ACCOUNTING		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students will demonstrate:		
<ul style="list-style-type: none"> • Explain the application of management accounting and various tool used • Make inter – firm and inter- period comparison of financial statements • Analyse financial statements using various ratios for business decisions. • Prepare fund flow and cash flow statements • Prepare different types of budgets for the business. 		
Syllabus:		Hours
Module No. 1: Introduction to Management Accounting		8
Introduction- Meaning and Definition – Objectives – Nature and Scope–Functions- Role of Management Accountant, Relationship between Financial Accounting and Management Accounting, Relationship between Cost Accounting and Management Accounting, advantages and limitations of Management.		
Module No. 2: Ratio Analysis		14
Introduction-Meaning and Definition of ratio, Meaning of Accounting ratio, and Ratio Analysis – Uses and Limitations –Classification of ratios- Liquidity ratios, Profitability ratios and Solvency ratios.		
Module No. 3: Cash Flow Analysis		12
Meaning and Definition of Cash Flow Statement – Concept of Cash and Cash Equivalents - Uses of Cash Flow Statement – Limitations of Cash Flow Statement – Provisions of Ind. AS-7. Procedure for preparation of Cash Flow Statement – Cash Flow from Operating Activities – Cash Flow from Investing Activities and Cash Flow from Financing Activities – Preparation of Cash Flow Statement according to Ind. AS-7(Indirect Method only).		
Module No. 4: Marginal Costing		10
Introduction-Meaning and definition of marginal cost, marginal costing, features of marginal costing- terms used in marginal costing – P/V ratio, BEP, Margin of Safety, Angle of Incidence and Break-Even Chart. Break Even Analysis- assumption and uses-problems.		

Module No. 5: Budgetary Control	12
<p>Meaning and Definition of Budget and Budgetary Control, objectives of budgetary control, advantages and limitations of budgetary control, essentials of effective budgeting, Types of budget-Functional budgets, Master Budget, Fixed and Flexible Budget, Problems on Flexible budget and Cash Budget.</p>	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • Collect the financial statement of a company and calculate important ratios. • Collect the annual report of a company and prepare a cash flow statement. • Prepare a Break-even-chart with imaginary figures. • Prepare a flexible budget using imaginary figures. • Prepare a Cash budget using imaginary figures 	
<p>Text Books:</p> <ol style="list-style-type: none"> 1. Dr. S.N. Maheswari, Management Accounting, Mahavir Publications 2. T.S.Sexana, Advanced Cost and Management Accounting, Sultan Chand 3. Jain and Narang, Cost and Management Accounting, Kalyani Publisher. 4. Dr. S.N. Goyal and Manmohan, Management Accounting, S.N. Publications. 5. B.S. Raman, Management Accounting, United Publishers. 6. Sharma and Gupta, Management Accounting, Kalyani Publishers. 7. M N Arora, Accounting for Management, Himalaya Publisher 8. Jawahar Lal, Cost Accounting; McGraw-Hill Education (India) <p>Note: Latest edition of text books may be used.</p>	

Name of the Program: BBA		
Course Code: BBA 4.2		
Name of the Course: BUSINESS ANALYTICS		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students will able to:		
<ul style="list-style-type: none"> • Understand types of analytics and data models • Understand the role of data indecision making, sources and types of Data. • Ability to analyse data using different data analytic tools and draw inferences. • Understand applied statistics for business problems. • Demonstrate visualization of data. 		
Syllabus:		Hours
Module No. 1: Introduction to Business Analytics		12
Business Analytics, Terminologies used in Analytics: Business Analytics, Business Intelligence, Meaning, Importance, Scope, Uses of Business Analytics, Architecture of Business Analytics, Types of Analytics: Descriptive, Diagnostics, Predictive, Prescriptive, Application of Business analytics, Introduction to Data Science and Big Data.		
Module No. 2: Role of Data in The Organization		10
Sources of data, Use of Data in Decision making, Importance of data quality, dealing with missing or incomplete data, Types of Digital Data- Structured, Semi Structured, Unstructured Data. Data warehouse, Data mining, Data Integration – What, need, advantages, approaches of Data integration, Data profiling.		
Module No. 3: Tools Used for Data Analytics		11
Introduction to data analytics software – Types of data analytics software – open source and proprietary software.		
Lab sessions:		
R, JAMOVI, GRETL, Python: Installation of software –Installation of packages / library - Importing of data – Saving of data – Run descriptive Statistics – Interpret result – plotting of charts – inferences of chart. (Using all the four specified softwares).		
Module No. 4: Database Orientation		12
Database definition, types of structures, DBMs, RDBMS, Relational Database Language , Introduction to SQL, Features of SQL, SQL Languages, DDL commands- Create, Add, Drop, Constraints in SQL, DML Commands – Insert, Delete, Update, Data Query		

Language – Where clause, Order by, Group by, DCL commands – Grant, Revoke, TCL
Commands – Commit, Roll Back, Save point. Aggregate Functions, Relational Algebra.

Module No. 5: Data Visualization Using Tableau (Public Version)

10

Introduction to Dimensions and measures, Types of Charts, (Pie Chart, Column Chart, Line Chart, Bar Chart, Area Chart, Scatter Chart, Bubble Chart, Stock Chart), Basic understanding in dashboard and storyboard. (Explain using practical examples and students executes the examples using tableau.)

Skill Developments Activities:

1. Prepare tree map chart using Tableau.
2. Run a descriptive statistic using R and Python software.
3. Execute a summary chart in JAMOVI.
4. Execute DCL and TCL Command in SQL.

Text Books:

1. Business Analytics: Text and Cases, Tanushri Banerjee, Arvindram Banerjee, Publisher: Sage Publication
2. Business Analytics, U Dinesh Kumar, Publication: Wiley
3. Business Analytics, R. Evans James, Publisher: Pearson
4. Fundamental of Business Analytics, Seema Acharya R N Prasad, Publisher: Wiley
5. Business Analytics: Data Analysis and Decision Making, Albright and Winston published by Cengage Learning.
6. Swain Scheps, Business Intelligence for Dummies.
7. Rick Sherman, Business Intelligence Guidebook: From Data Integration to Analytics
8. Cindi Howson. Successful Business Intelligence, Second Edition: Unlock the Value of BI & Big Data
9. Seema Acharya R N Prasad, Fundamentals of Business Analytics, 2ed, Wile

Note: Latest edition of text books may be used.

Name of the Program: BBA		
Course Code: BBA 4.2		
Name of the Course: FINANCIAL MARKETS & SERVICES		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures and Tutorials		
Course Outcomes: On successful completion of the course, the Students will be able to:		
<ul style="list-style-type: none"> • Understand the financial system, Institutions, financial markets and services. • Analyse the concepts relevant to Indian financial market and relevance. • understand concept of financial services, types and functions. • Understand the types of financial Instruments. • Demonstrate an understanding the functioning of stock markets. 		
Syllabus:		Hours
Module No. 1: Overview of Financial System		08
Introduction to Financial System – Features, Constituents of Financial System; Financial Institutions; Financial Services; Financial Markets and Financial Instruments.		
Module No. 2: Financial Institutions		16
Characteristics of Financial Institutions, Broad Categories – Money Market Institutions and Capital Market Institutions. Objectives and Functions of Industrial Finance Corporation of India, Industrial Development Bank of India, State Financial Corporations, Industrial Credit and Investment Corporation of India, EXIM Bank of India, National Small Industrial Development Corporation, National Industrial Development Corporation, RBI Measures for NBFCs.		
Module No. 3: Financial Services		12
Financial Services – Meaning, Objectives, Functions, Characteristics; Types of Financial Services - Merchant Banking – Functions and Operations, Leasing, Mutual Funds, Venture Capital & Credit Rating.		
Module No. 4: Financial Markets and Instruments		10
Meaning and Definition, Role and Functions of Financial Markets, Constituents of Financial Markets; Money Market Instruments, Capital Market and Instruments; SEBI guidelines for Listing of Shares and Issue of Commercial Papers.		

Module No. 5: Stock Markets	10
<p>Meaning of Stock, Nature and Functions of Stock Exchange; Stock Market Operations - Trading, Settlement and Custody (Brief discussion on NSDL & CSDL); Brief discussion of BSE, NSE and OTCEI.</p>	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • Visit any financial institution and prepare a report regarding its structure, functions and performance. • Analyze the ratings given by any credit rating agency, for at least 5 companies. • Collect information on NASDAQ, Nifty, Sensex and write brief report on the same. • Identify a company of your choice and record its share prices for one month. 	
<p>Text Books:</p> <ol style="list-style-type: none"> 1. L.M. Bhole, Financial Institutions & Markets, McGraw Hill 2. Khan, M.Y, Indian Financial System, McGraw Hill 3. Sharma, Meera, Management of Financial Institutions, Eastern Economy Edition 4. Bhole and Mahakud, Financial Institutions and Markets – Structure, Growth and Innovations, McGraw Hill 5. Guruswamy, S., Financial Services and System, McGraw Hill 6. Edminister. R.O, Financial Institutions, Markets & Management, McGraw Hill 7. Khan. M.Y, Indian Financial System, Vikas Pub. House 8. H.R Machiraju, Indian Financial System, Vikas Pub. House 9. E.Gorden & K. Nataraj, Financial Markets and Services, HPH <p>Note: Latest edition of text books may be used.</p>	

Name of the Program: BBA		
Course Code: BBA 4.3		
Name of the Course: FINANCIAL MANAGEMENT		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
4 Credits	4 Hrs.	56 Hrs.
Pedagogy: Classroom lectures, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students will able:		
<ul style="list-style-type: none"> • To identify the goals of financial management. • To apply the concepts of time value of money for financial decision making. • To evaluate projects using capital budgeting techniques. • To design optimum capital structure using EBIT and EPS analysis. • To evaluate working capital effectiveness in an organization. 		
Syllabus:		
Module No. 1: Introduction to Financial Management		Hours 12
Introduction – Meaning of Finance, Business Finance, Finance Functions, Organization structure of Finance Department; Financial Management – Goals of Financial Management, Financial Decisions -Types of Financial Decisions, Role of a Financial Manager; Financial Planning – Principles of Sound Financial Planning, Steps in Financial Planning, Factors influencing a Sound Financial Plan.		
Module No. 2: TIME VALUE OF MONEY		12
Meaning, Need, Future Value (Single Flow, Uneven Flow & Annuity); Present Value (Single Flow – Uneven Flow & Annuity); Doubling Period; Concept of Valuation -- Valuation of Bonds, Debentures and Shares (Simple Problems)		
Module No. 3: FINANCING & DIVIDEND DECISIONS		12
Financing Decision: Sources of Long-Term Finance -- Meaning of Capital Structure, Factors influencing Capital Structure, Optimum Capital Structure – EBIT, EPS Analysis, Leverages – Problems.		
Dividend Decision: Meaning & Determinants of Dividend Policy, Types of Dividends, Bonus Shares (Meaning only)		

Module No. 4: INVESTMENT DECISION	12
Meaning and Scope of Capital Budgeting, Features & Significance, Techniques --Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index (Problems)	
Module No. 5: WORKING CAPITAL MANAGEMENT	12
Working Capital -- Concept of Working Capital, Significance of Adequate Working Capital, Types of Working Capital, Problems of Excess or Inadequate Working Capital, Determinants of Working Capital, Sources of Working Capital, Estimation of Working Capital (Simple Problems)	
Skill Developments Activities:	
<ul style="list-style-type: none"> • Calculate Equated Installment and prepare Loan Repayment schedule using imaginary figures. • Identify capital structure practices followed in any firm/company of your choice. • Collect the information on various types of bonds offered by government and record the same. • Prepare a working capital statement using imaginary values. 	
Text Books:	
<ol style="list-style-type: none"> 1. I M Pandey, Financial Management. Vikas Publication. 2. Prasanna Chandra, Financial Management, TMH 3. S N Maheshwari, Financial Management, Sultan Chand 4. Khan and Jain, Financial Management, TMH 5. Dr. V Rajeshkumar and Nagaraju V, Financial management, MH India 6. Dr. Aswathanarayana.T ,Financial Management, VBH 7. K. Venkataramana, Financial Management, SHBP 8. G. Sudarshan Reddy, Financial Management, HPH 9. Sharma and Shashi Gupta, Financial Management, Kalyani Publication 	
Note: Latest edition of text books may be used.	

Name of the Program: BBA		
Course Code: BBA 4.6		
Name of the Course: BUSINESS LEADERSHIP SKILLS (OEC)		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.
Pedagogy: Classrooms lecture, Tutorials, and Problem Solving.		
Course Outcomes: On successful completion of the course, the Students will able:		
<ul style="list-style-type: none"> ○ To understand the significance of leadership skills for effective people management. ○ To increase the comprehension of leadership through various leadership theories. ○ To analyse different leadership styles, types, patterns and functions. ○ To demonstrate an understanding of various leadership approaches for effective management of people. ○ To demonstrate an awareness of ethical leadership. 		
Syllabus:		Hours
Module No. 1: Introduction to Business Leadership		6
Introduction to business leadership, meaning/definition of leadership, evolution and growth of leadership; functions and characteristics of leadership; latest trends/current scenario of business leadership.		
Module No. 2: Leadership from Managerial Perspective		10
Nature of leadership, Significance or importance of leadership, Qualities of an effective leader, leader v/s manager; authority v/s leadership; formal v/s informal leadership; different roles of leadership; different levels of leadership; traits of an ethical leader.		
Module No. 3: Leadership -Theoretical Perspectives.		8
Great man theory, Trait theory, Situational leadership theory, transactional leadership, transformational leadership theory, Blake and Mouton's Managerial Grid.		
Module No. 4: Leadership Styles		10
Leadership styles: a) Autocratic leadership, b) Bureaucratic leadership, c) Democratic leadership, and d) Laissez faire leadership e) Transformational Leadership, f) Charismatic Leadership.		
Module No. 5: Leadership Skills		8
Communications Skills, Decision Making Skills, Emotional Management Skills, Public Relation Skills, Personal Values and Ethics, Conflict Resolution Skills.		

Skill Developments Activities:

- Collect information about the real time corporate leaders with different leadership styles & discuss their leadership styles and traits in the class room.

- “What if?”

This practical activity identifies how members of a team solve their problems differently?

Present the students with a workplace problem, and have each student participant write down what they would do to solve it. Then, have each participant read their response aloud. This can help the teacher to identify the types of leadership styles that are present among the student participants and thereby highlight and discuss them in the class.

- Student can make a presentation on any famous corporate/political personality covering their leadership style, their approach to people management, their effectiveness in managing conflicts and how did they manage the crisis situations and so on.

- Analyze two cases related to leadership styles/strategies.

Text Books:

1. Northouse, P. (2007). Leadership: Theory and Practice. Sage Publications.
2. Stephen, R. P. (1988). Organizational Behaviour - Concepts, controversies and Applications. New Delhi: Printice Hall of India Ltd.
3. Subba Rao. (2018). Organizational Behaviour (18th ed.). Himalaya Publishing House.
4. Subba Rao. (2022). Personnel and Human Resource Management (5th ed.). Bangalore: Himalay Publishing House.
5. Daloz Parks, S., Leadership can be taught: A Bold Approach for a Complex World, Boston: Harvard Business School Press.
6. Drucker Foundation (Ed.), Leading Beyond the Walls, San Francisco: Jossey Bass.
7. Al Gini and Ronald M. Green, Virtues of Outstanding Leaders: Leadership and Character, John Wiley & Sons Inc.
8. S Balasubramanian, The Art of Business Leadership – Indian Experiences, Sage Publications

Note: Latest edition of text books may be used.

Name of the Program: BBA		
Course Code: BBA 4.6		
Name of the Course: PERSONAL WEALTH MANAGEMENT		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.
Pedagogy: Classroom lectures and Tutorials		
<p>Course Outcomes: On successful completion of the course, the Students will able to:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the importance of Wealth Management and Financial Planning in personal life. • Identify the Real Estate Investment Routes and understand the tax planning that minimises tax burden. • Select and Apply the Asset Allocation strategies to balance between Risk and Return. • Analyse the Retirement Planning Benefits and retirement strategies to provide regular income for life. • Understand the basic principles and importance various insurance policies. 		
Syllabus:		Hours
Module No. 1: Wealth Management and Financial Planning		08
Meaning of Wealth Management, Need, Scope and Components of Wealth Management, Process of Wealth Management, Expectations of Clients, Code of Ethics for Wealth Manager. Challenges to WM in India – Financial Planning - Systematic Approach to Investing (SIP, STP & SWP)- Life Cycle and Wealth Cycle - Financial Planning in India, Legal aspects of Financial Planning.		
Module No. 2: Estate Planning and Tax Planning		08
Real Estate, Role of Real Estate, Real Estate Investment Routes, Real Estate Indices -Assets & Liabilities, Nomination, Inheritance Law, Will, Understanding Trust and Trust Documents – Tax Planning Concepts, Assessment Year, Financial Year, Income Tax Slabs, TDS, Advance Tax, LTCG, STCG, Carry Forward and Set-off.		
Module No. 3: Asset Allocation Strategies		08
Asset allocation Strategies -Asset allocation Decision, Equity portfolio strategies - Active Vs Passive, Management strategies, Value Vs growth investing, -Tactical, Fixed & Flexible. Portfolio Management Strategies - Indexing - Active - interest rate anticipation, Valuation analysis, Credit analysis, Yield spread analysis and Bond swaps - Allocation to Speculation, Diversification in Perspective.		

Module No. 4: Retirement Planning and Employee Benefits	10
Introduction to Retirement Planning - Types of Retirement Plans - Defined Benefit and Defined Contribution plan, Superannuation Fund and other retirement plans, Pre and Post Retirement Planning Strategies – ESOP and ESPP.	
Module No. 5: Insurance Products in Wealth Management	08
Meaning, Basic Principles of Insurance, Functions and Characteristics of Insurance- Group Life and Health Insurance; Types of Life Insurance Policies, Types of General Insurance Policies, Health Insurance and Group Insurance Policy – Risk Management through Insurance.	
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • List out different Insurance schemes • Create your own personal portfolio using imaginary numbers and justify. • Conduct a survey of 20 salaried employees on their investment avenues through questionnaire. • Prepare technical charts report of any 5 listed stocks in BSE S&P SENSEX. 	
<p>Text Books:</p> <ul style="list-style-type: none"> • Pawan V. Jhabak – Wealth Management, Himalaya Publishing Hou Himalaya Publishing House Pvt. Ltd., Mumbai - 400 004. • S.K Bagchi – Wealth Management Jaico Publishing House, Firs Edition. • NSE Academy – Financial Planning and Wealth Management. • NCFM Work Book – Financial Markets (Advanced). <p>Note: Latest edition of text books may be used.</p>	

Name of the Program: BBA		
Course Code: BBA 4.7		
Name of the Course: FINANCIAL LITERACY AND INVESTMENT AWARENESS		
Course Credits	No. of Hours per Week	Total No. of Teaching Hours
3 Credits	3 Hrs.	42 Hrs.
Pedagogy: Classroom lectures and Tutorials		
Course Outcomes: On successful completion of the course, the Students will able to:		
<ul style="list-style-type: none"> • Provide the foundation for financial decision making. • List out various savings and investment alternatives for a common man. • Give a detailed overview of stock market and stock selection • Orient the learners about mutual funds and the criteria for selection 		
Syllabus:		Hours
Module No. 1: Foundation for Finance		
<p>Introduction to Basic Concepts: Understand the need for financial planning-basic concepts-life goals and financial goals-form of a sample financial plan for a young adults.</p> <p>Economics-Meaning-scope-key concepts influencing decisions making both micro and macro.</p> <p>Banking in India- Types of Bank Deposits, Deposit Insurance (PMJDY), Traditional and New Banking Models. Debit and Credit Cards. Digital Payment System-Internet Banking(NEFT, RTGS and IMPS) Mobile Banking, Mobile Wallets, AEPS, UPI.</p> <p>Orientation to Financial Statements-financial terms and concepts, model for reading financial statements, basic ratios for evaluating companies while investing-Time Value of Money-Concept of Compounding and Discounting.</p>		04 Hours
Module No. 2: Investment Management		
<p>Investment Goals-Basic investment objectives-investment goals-time framing-assessing risk profile-concept of diversification-risk measurement tools.</p> <p>Investment and Saving Alternatives for a Common Investor: Insurance-Health, Life and Other General Insurance (Vehicle Insurance, Property Insurance etc). Retirement and Pension Plans-National Pension System, Atal Pension Yojana, PM-SYM Yojana, PMLVMY, PMKMDY etc., stocks, bonds, mutuals funds. Investor Protection and Grievance Redressal.</p>		08 Hours

<p>Stock Markets: Primary Market and Secondary Market, Stock Exchanges, Stock Exchange Operations-Trading and Settlement, Demat Account, Depository and Depository Participants.</p> <p>Stock Selection: Fundamental Analysis-Economy Analysis, Industry Analysis and Company Analysis. Technical Analysis-Graphical Patterns, Candle-Stick Patterns, Indicator and Oscillators.</p> <p>Stock Return and Risk: Analysing risk and returns trade off-relationship-investment risk.</p>	
<p>Module No. 3: Mutual Funds and Financial Planning Essentials</p>	
<p>Mutuals Funds: Features of Mutual Funds, Mutuals Fund History in India, Major funds houses in India and Mutual Fund Schemes. Types of Mutual Funds Plan. Net Asset Value.</p> <p>Criteria for Selection of Mutual Funds: Returns, Performance Measures-Sharpe, Treynor, Alpha, Beta and R Square.</p> <p>Financial Planning-Sample formats-integrating all the concepts learnt with a personal financial plan.</p> <p>Giving and Supporting-Family Support-Charitable giving-crowd sourcing for needs.</p>	<p>03 Hours</p>
<p>PRACTICAL COMPONENT:</p>	
<p>Unit 1: Foundation of Finance</p> <ul style="list-style-type: none"> • Spreadsheet Modelling <ul style="list-style-type: none"> • IF Function • SUM Function • AVERAGE Function: INDEX, MATCH and VLOOKUP Function: • RANK Function • SUMPRODUCT Function • MAX & MIN Function • ERRORS in Modeling (#VALUE!, #NAME?, #DIV/O!, #REF!, #NUM!, #NA) • PRESENT VALUE Functions • FUTURE VALUE Functions • ANNUITY Functions • PERPETUITY Functions • Statistical Functions in Excel • Financial Statements in Excel 	<p>06 Hours</p>

<p>Unit 2: Investment Management</p> <ul style="list-style-type: none"> • Administering Risk Tolerance Tool • Group Presentations on Investment Alternatives (Advantages, Suitability and Limitations) • Demonstration of Stock Trading • Economy Analysis (www.tradingeconomics.com) • Industry Analysis (www.ibef.org) • Company Analysis (www.valueresearchonline.com) • Spreadsheet Modelling for Stock Valuation (Dividend Discount Model, Free Cash Flow Model and Relative Valuation) • Demonstration of Technical Analysis and Exercises (NSE - TAME) • Spreadsheet Modelling for calculating Stock Return, Risk and Beta 	<p>15 Hours</p>
<p>Unit 3: Mutual Funds and Financial Planning Essentials</p> <ul style="list-style-type: none"> • Identification of Fund Houses in India, Schemes and Plans of each Mutual Fund House (www.amfindia.in, www.valueresearchonline.com) • Exercises on Calculation of Net Asset Value • Demonstration of Mutual Fund Fact Sheet • Exercises on reading performance measures and selection of mutual funds. • Preparation of Financial Plan. 	<p>06 hours</p>
<p>Skill Developments Activities:</p> <ul style="list-style-type: none"> • Prepare a Spreadsheet modelling using financial functions. • Prepare a group presentation on investment alternatives (advantages, sustainability and limitations) • Prepare a exercise on calculation of net asset value of mutual fund scheme. 	
<p>Reference:</p> <ol style="list-style-type: none"> 1. RBI Financial Education Handbook 2. NSE Knowledge Hub, AI-powered Learning Experience Platform for BFSI 3. NSE Academy Certification in Financial Markets (NCFM) Modules: <ol style="list-style-type: none"> a. Macroeconomics for Financial Markets b. Financial Markets (Beginners Module) 	

c. Mutual Funds (Beginners Module)

d. Technical Analysis

Note: Latest edition of text books may be used.

Text Books:

Prasanna Chandra, Financial Management, Mc Graw Hill.

Aswath Damodaran, Corporate Finance, John Wiley & Sons Inc.

Pitabas Mohanty, Spreadsheet Skills for Finance Professionals, Taxmann Publications.

Fischer & Jordan, Security Analysis and Portfolio Management, Prentice Hall.

Websites:

1. www.sebi.gov.in
2. www.nseindia.com
3. www.amfiindia.com

SEMESTER III

COURSE TITLE	BIO-ORGANIC CHEMISTRY
COURSE CREDITS	04
TOTAL CONTACT HOURS	56
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcome:

These topics will enable students to understand the fundamentals of organic chemistry pertinent to their importance in understanding biochemical reactions.

Course outcomes /Program outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Aptitude	X	X	X	X								
Critical thinking		X										
Subject clarity	X	X				X	X	X		X		X
Analytical skill	X				X	X	X	X	X			X

UNIT 1: Reaction mechanisms and aliphatic hydrocarbons

14 hours

Introduction, meaning of the term, kinetic and non-kinetic. Fundamental aspects: Homo and heterolytic cleavage. Concept of inductive effect, mesomeric effect, resonance, and hyper conjugation. Classification of organic reactions (substitution, addition, elimination, and re-arrangement), with two examples for each. Concepts Reactive intermediates of the following – free radicals, carbo cations and carbanions, free radicals, carbines, nucleophiles and electrophiles (Formation and Stability).

Hydrocarbons -Mechanism of addition of HCl to propene, Markownikoff's rule. Peroxide effect, Alkenes – Ozonolysis, oxidation. Alkynes – formation of acetylides and their importance. Dienes– types with examples. Conjugate dienes, 1,3-butadiene – stability, mechanism of addition of HBr. Conformational analysis of ethane and n-butane.

UNIT 2: Mechanism of substitution, elimination, and addition reactions

14 hours

S_N1 and S_N2 reactions on tetrahedral carbon, energy profile diagrams, Stereochemistry, factors affecting S_N2 and S_N1 reactions

The Elimination reactions- E₂ reaction, Zaitsev rule, E₁ reaction. Stereochemistry of E₁ & E₂ reactions, E₂ & E₁ elimination from cyclic compounds. Substitution and Elimination reactions in Synthesis.

Addition reactions - Aldehydes and Ketones - nucleophilic addition of acetals & ketals. Addition of Ammonia, primary amines, and other ammonia derivatives. Conjugate addition. Conjugation addition in alpha and beta unsaturated aldehydes and ketones 1, 2 and 1,4 addition.

UNIT 3: Mechanism of electrophilic aromatic substitution reactions

14 hours

Aromatic compounds - aromaticity, criteria for aromaticity, anti-aromatic, and non-aromatic compounds with examples. Mechanism of electrophilic aromatic substitution reactions- Halogenation, nitration, sulfonation, Friedel crafts alkylation. Friedel crafts acylation- mechanism involved. Relative reactivity of substituted benzenes, polycyclic benzenoid hydrocarbons.

The reaction of the coenzymes.

Overall view of metabolism, thiamine pyrophosphate- structure and its role in decarboxylation of alpha- keto acids.

Biotin- structure and its role in carboxylation of some important biochemical reactions of carbohydrate and lipid metabolism.

Vit B₂ its role in rearrangement reactions.

Vit B₂ coenzymes its role in redox reactions with suitable examples.

UNIT 4: Bio-organic compounds

14 hours

Alcohols: Classification, monohydric alcohols: examples, general and distinguishing reactions. Dihydric alcohols: glycols, Tri hydric alcohols: glycerol – synthesis from propene, properties and uses. Phenols: Classification, electronic interpretation of acidity of phenols, mechanism of Kolbe, Reimer– Tiemann and bromination reactions.

Hydroxy acids: Structure and properties: Lactic acid, Citric acid and Isocitric acid. Dicarboxylic acids: Maleic and Fumaric acid. Ketoacids: Pyruvic, α -Ketoglutaric, Oxaloacetic acid.

Carbonyl compounds: General properties, Keto-enol tautomerism. Mechanisms: addition of HCN to acetaldehyde, Claisen and aldol condensations. Quinones: o and p-benzoquinones- structure and properties.

Amines: Classification, properties, functional group – Basicity of amines, acylation. Reaction with HNO₂ & Schiff's base formation. Distinguishing reactions of primary, secondary and tertiary amines.

Heterocyclic compounds: Definition, classification with examples, structure and biological importance of furan, pyrrole, thiophene, pyridine, pyran, thiazole, pyrimidine, purine, indole, imidazole, quinoline and isoquinoline. Basicity of pyrrole and pyridine.

Terpenes: Definition, Isoprene rule, classification, isolation, structure and biological importance of menthol, camphor, farnesol, phytol, lanosterol, lycopene and dolichols.

Steroids: Basic ring structure in steroids. Structure and biological importance of cholesterol, phytosterols, ergosterol, cortisol, β -estradiol, testosterone, and aldosterone. Bile acids (Mono, Di & Tri cholic acids).

Alkaloids: Definition, classification based on their structure and biological functions, Isolation of alkaloids, structure and physiological action of morphine, nicotine and atropine.

REFERENCES

1. Textbook of Organic Chemistry 22nd Edition S. Chand Publishers 2019.
2. Organic Chemistry. Vol. I Fundamental Principles. I. L. Finar. 6th Edn. ELBS, 2002
3. Organic Mechanisms, Peter Sykes, Longman, 1977
4. Organic Chemistry. R.T. Morrison and R.N. Boyd. 6th Edn. Prentice Hall, India, 2018
5. Lehninger- Principles of Biochemistry; DL Nelson and MM Cox [Eds), 6th Edn. Macmillan Publications 2012
6. Chemistry- An Introduction to General, Organic and Biological Chemistry, 7th Edn. Karen C. Timberlake, Benjamin Cummings, 1999
7. Reaction Mechanisms at a Glance, ed. M. Moloney, Blackwell Science 2000.

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

SEMESTER III
PRACTICALS III

COURSE TITLE	BIO-ORGANIC CHEMISTRY
COURSE CREDITS	02
TOTAL CONTACT HOURS	4 Hours/Week
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	25
SUMMATIVE ASSESSMENT MARKS	25

Course outcome:

This course aims to familiarize students with the principles of organic chemistry and basic qualitative analysis of organic compounds. Course objective is to provide experimental practice of preparation of organic compounds and extraction of biologically important compounds.

Experiments:

I. Systematic qualitative analysis of organic compounds (6 practicals)

- | | | |
|-------------------|-----------------|-----------------|
| 1. Urea | 2. Aniline | 3. Benzoic Acid |
| 4. Salicylic acid | 5. Benzaldehyde | 6. Acetophenone |
| 7. Chlorobenzene | 8. Nitrobenzene | |

II. Preparation of following organic compounds (2 practicals)

1. Acetylation: Preparation of acetyl salicylic acid from salicylic acid.
2. Oxidation: Preparation of benzoic acid from benzaldehyde.
3. Nitration: Preparation of m-dinitrobenzene from nitrobenzene.
4. Hydrolysis: Preparation of benzoic acid from ethyl benzoate.

III. Extractions

1. Extraction of caffeine from tea leaves
2. Extraction of starch from potatoes
3. Extraction of casein from milk

REFERENCES:

1. Practical Organic Chemistry: Qualitative Analysis by S.P. Bhutani, A. Chhikara 2009
2. Textbook of Practical Organic Chemistry Including Qualitative Organic Analysis by Arthur Israel Vogel 2003
3. Comprehensive practical organic chemistry- preparation and quantitative analysis. V. K. Ahluwalia and Renu Aggarwal 2004

4. Practical Hand Book of Systematic Organic Qualitative Analysis. Md. Rageeb Md. Usman, S. S. Patil 2017
5. Laboratory Manual of Inorganic & Organic Chemistry (Qualitative Analysis) Kalpa Mandal, Sonia Ratnani 2020

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING/ ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CONTINUOUS EVALUATION AND CLASS TEST	15
RECORD / VIVA VOCE	10
TOTAL	25

SEMESTER III
OPEN ELECTIVE 1

COURSE TITLE	BIOCHEMICAL TECHNIQUES
COURSE CREDITS	03
TOTAL CONTACT HOURS	42
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcome:

These topics will enable students to develop competence in handling various chromatographic, electrophoretic and isotopic techniques and apply them in isolating and characterizing different biological molecules.

UNIT 1 : **14 hours**

Microscopy: Different types of microscopes – electron microscopes – TEM, SEM. Fluorescence and confocal microscopes used in fine structure studies.

Centrifugation Techniques: Introduction, basic principles, and applications of sedimentation. Centrifuges and their use - small bench centrifuges, large capacity refrigerated centrifuges, high speed refrigerated centrifuges, continuous flow centrifuges, Preparative ultra-centrifuges, analytical ultracentrifuges, and density gradient centrifugation.

UNIT 2 : **14 hours**

Chromatography: Introduction, classification of chromatographic techniques. Principle, materials, theory and applications of paper chromatography, thin layer chromatography, column chromatography- adsorption chromatography, gel permeation, ion exchange chromatography, affinity chromatography, gas chromatography, FPLC, high performance (pressure) liquid chromatography.

Electrophoresis techniques: Introduction. Principles and application of electrophoretic techniques-paper electrophoresis, starch gel electrophoresis, polyacrylamide gel electrophoresis, agarose gel electrophoresis, isoelectric focusing, isotachopheresis, pulse field electrophoresis, two-dimensional electrophoresis, capillary electrophoresis, preparative and high voltage electrophoresis.

UNIT 3 :**14 hours**

Radio isotopic techniques: Introduction to isotopes; mass and radioisotopes. Nature of radioactive decay, rate of radioactive decay, units of radioactivity, measurement of radioactivity- proportional counters, scintillation counters, autoradiography, isotopic dilution technique. Applications of radioisotopes in the biological sciences.

Spectroscopy: Introduction, Nature of electromagnetic Radiations. Principles and applications of the following spectroscopic techniques in biochemical investigations- Visible and Ultraviolet spectroscopy, Fluorescence spectroscopy, Infrared spectroscopy, Optical rotation dispersion (ORD), Circular dichroism (CD) spectroscopy, electron spin resonance (ESR), Atomic Absorption spectroscopy, Nuclear Magnetic resonance (NMR) spectroscopy and Mass spectroscopy

REFERENCES:

1. Modern Experimental Biochemistry: Rodney Boyer, 3rd Edn. Benjamin Cummings, 2000
2. Practical Skills in Biomolecular Sciences: R Reed, D. Holmes, J. Weyers, and A. Jones 1998
3. Physical Biochemistry: David Frifielder 2nd Edition, 1983
4. Biophysical Chemistry Upadya and Upadya, 2016
5. Introductory Practical Biochemistry: SK Sawhney and Randhir Singh, 2001

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

SEMESTER III
OPEN ELECTIVE 2

COURSE TITLE	HORMONES - BIOCHEMISTRY AND FUNCTION
COURSE CREDITS	03
TOTAL CONTACT HOURS	42
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcome: These topics will enable the students to:

- Understand the function of hormones and their regulation.
- Know how hormonal systems act in an integrated manner to regulate overall body functions.
- Understand how failure of these normal physiologic functions and integrations are associated with some endocrine disorders.

UNIT 1 :

14 hours

Introduction to the system and concepts of signaling. Classification, intercellular communication, regulation of synthesis and secretion of hormones. Chemical signaling- endocrine, paracrine, autocrine, and neuroendocrine mechanisms. Mechanisms of hormone action: synergism, antagonism, permissive effects. Division of hormones by the origin, chemical structure, location, and mechanism of action. Physiological role and disorders of Pituitary, Pineal, Thyroid and Parathyroid hormones. Introduction to the hypothalamus as the true master gland with Releasing hormones and inhibitory substances. Neurohypophysis and its secretions – ADH and Oxytocin

UNIT 2 :

14 hours

Physiological role and disorders of hormones of pancreas, adrenal, and placenta. Introduction to gastrointestinal hormones and neurotransmitters (Acetyl choline, GABA, Serotonin). Mechanism of action, target tissues, and the physiological effects of gastrointestinal hormones. Structure and functions of sex hormones. Hormones during ovarian and uterine phases of menstrual cycle; Placental hormones; role of hormones during parturition and lactation. Hormone receptors: receptors in the cell membrane and in the cell. Secondary and tertiary messengers (cAMP and

Ca²⁺). Overview on signal transduction pathways for steroidal and non-steroidal hormones (One example each).

UNIT 3 :

14 hours

Clinical endocrinology- Blood volume, composition and functions of plasma and serum. Separation and storage of body fluids. Methods of hormone estimation, principles of assay systems, normal range of hormones in tissues and clinical conditions leading to abnormal levels with interpretations. Thyroid function test- Determination of T3, T4, and TSH. Infertility profile: Determination of LH, FSH, TSH, Estrogen, Progesterone, Total Testosterone, Free testosterone. Major manifestations of disease of the endocrine pancreas, thyroid, hypothalamus, and pituitary disease.

REFERENCES:

1. Norman AW, Litwack G (1997), Hormones, 2nd Edition, Elsevier Publications.
2. Bolander F (2004), Molecular Endocrinology, 3rd Edition, Elsevier Publications.
3. Rifai N (2007), Teitz Fundamentals of Clinical Chemistry, 6th Edition, Elsevier Publications.
4. Henry's Clinical Diagnosis and Management by Laboratory Methods (2011), 22nd Edition, Elsevier.
5. Vasudevan DM (2011), Text book of Medical Biochemistry, 6th Edition, Jaypee Publishers.
6. Chatterjea MN & Shinde R (2012), Text book of Medical Biochemistry, 8th Edition, Jaypee Publications.
7. Bishop ML, Fody EP, Schoeff LE (2013), Clinical Chemistry: Principles, Techniques, and Correlations, 7th Edition, Wiley Publications.
8. J N Singh (2017), Biochemistry General, Hormonal and Clinical - 1st Edition, Atithi books Publishers.
9. Rifai N (2017), Teitz Textbook of Clinical Chemistry and Molecular Diagnostics, 6th Edition Saunders Publications.

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

SEMESTER IV

COURSE TITLE	ANALYTICAL BIOCHEMISTRY
COURSE CREDITS	04
TOTAL CONTACT HOURS	56
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcome: These topics will enable the students to

- Understand the concept of biological sample preparation
- Appreciate chemistry and application of analytical instruments.
- Get acquainted with care and maintenance of equipment and chemicals.
- Understand clinically relevant biochemical analysis of all biochemical components i.e., proteins, electrolytes, hormones etc.,
- Have basic knowledge of clinical and forensic analytical methods and their principles.

Course outcomes /Program outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Aptitude	X	X	X	X								
Critical thinking		X				X						
Subject clarity	X	X						X				X
Analytical skill				X	X	X	X	X	X	X	X	X

UNIT 1: Biological sample preparation and fractionation

14 hours

Introduction and objectives of bioanalysis and extraction of molecules from tissues and cells. Sample preparation types of sample living, postmortem extraction of macromolecules from tissues; liquid-liquid, liquid-solid and precipitation methods.

Centrifugation- Introduction, principles of centrifugation, Sedimentation, angular velocity, centrifugal field, relative centrifugal field. Types of centrifugations- Preparative and analytical. Differential, density gradient and ultra-centrifugation. Basic instrumentation; types of rotors and their design. Laboratory centrifuge; operational instruction and applications. Analytical Centrifuges- Optics; Application in sub-cellular fractionation. Sedimentation coefficient, care, and maintenance of instrument.

UNIT 2: Chromatography

14 hours

General principles of chromatography, history of chromatography. Classification based on 1. physical way stationary and mobile phase are brought together- Planar and column chromatography, 2. based on types of mobile and/or liquid phase adsorption and partition- Gas chromatography and liquid chromatography. Based on stationary phase- thin layer chromatography, Paper chromatography - ascending, descending and circular, 2-D chromatography, Rf values.

Classification of chromatography based on separation: Principles, methodologies and applications of adsorption, partition, ion-exchange, gel-filtration and affinity-chromatography. Advanced chromatography- HPLC and FPLC, UPLC and GLC.

UNIT 3: Electrophoretic and radio isotopic methods

14 hours

Electrophoresis: General principle of electrophoresis, velocity of a charged molecule in the applied electric field, relevance of Ohm's law in electrophoretic separations. Supporting media for electrophoresis; work of Tiselius, paper, agarose, polyacrylamide. Chemistry of polymerization of acrylamide gels, methodology and applications of native PAGE and SDS-PAGE, 2-D electrophoresis, Identification of proteins post electrophoresis- dyes and biological activities. Agarose gel and Pulse field electrophoresis, Applications of capillary electrophoresis and isoelectric focusing. Cellulose acetate electrophoresis. Principle and applications of immune-electrophoresis.

Radioisotopic methods: Radioactivity—Types of radioactive decay, Properties of α , β , γ radiations. Group displacement law. Decay law - decay constant, Half-life period and average life of a radioactive element. Detection of radioactivity – GM counter and scintillation counters (only principal and working) Applications of radioisotopes – ^3H , ^{14}C , ^{131}I , ^{60}Co and ^{32}P . Biological effects of radiations. Radiolabeling, safety measure in handling radio isotopes.

UNIT 4: Spectroscopic methods of bio-analysis

14 hours

Spectroscopic methods: Wave particle duality of light, electromagnetic spectrum, transition in spectroscopy. Principle, design and application of UV-Vis spectrophotometer. Beer's law and its limitations, determination of molar absorption coefficient of molecules. Working principle and application of a colorimeter, flame photometer and fluorimeter. Principle and application of IR, and Raman, ESR and NMR spectroscopy.

REFERENCES:

1. Analytical techniques in Biochemistry and Molecular Biology; Katoch, Rajan. Springer 2011
2. Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology 8th Edn. Andreas Hoffman and Samuel Clockie, Ed., Cambridge University Press, 2018.
3. Biochemistry and Molecular Biology; 5th Edn. D. Papachristodoulou, A. Snape, W.H. Elliott, and D. C. Elliott, Oxford University Press 2014

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

SEMESTER IV
PRACTICALS IV

COURSE TITLE	ANALYTICAL BIOCHEMISTRY
COURSE CREDITS	02
TOTAL CONTACT HOURS	4 Hours/ Week
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	25
SUMMATIVE ASSESSMENT MARKS	25

Course outcome: This course aims to provide experimental practice of analytical techniques in Biochemistry. Upon successful completion, students should develop skills in handling instruments and understand its application in research work.

- Sourcing and handling biological samples.
Develop skill and proficiency in basic techniques
- Centrifugation
- Chromatography
- Electrophoresis and
- Spectroscopy

Experiments:

1. Preparation of human lymphocytes using clinical centrifuge
2. Determination of packed cell volume/ hematocrit
3. Resolution of basic, acidic and aromatic amino acids by descending and circular paper chromatography.
4. Separation of plant pigments by gel-permeation chromatography
5. Identification and resolution of pigments by thin layer chromatography.
6. Determination of void volume of a gel-filtration column
7. Recording the absorption spectrum of riboflavin
8. Colorimetric estimation of glucose by DNS method
9. Estimation of DNA by diphenylamine method
10. Electrophoretic separation of plasma proteins

REFERENCES:

1. Analytical techniques in Biochemistry and Molecular Biology; Katoch, Rajan. Springer, 2011
2. Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology 8th Edn. Andreas Hoffman and Samuel Clockie, Ed., Cambridge University Press, 2018.
3. Biochemistry and Molecular Biology; 5th Edn. D. Papachristodoulou, A. Snape, W.H. Elliott, and D. C. Elliott, Oxford University Press, 2014

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CONTINUOUS EVALUATION AND CLASS TEST	15
RECORD / VIVA VOCE	10
TOTAL	25

SEMESTER IV

OPEN ELECTIVE 1

BIOCHEMICAL TOXICOLOGY

COURSE TITLE	BIOCHEMICAL TOXICOLOGY
COURSE CREDITS	03
TOTAL CONTACT HOURS	42
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcome: This open elective course offered to various streams gives basic idea about biochemical basis of various effects of toxins/ pharmaceuticals and an outline of process involved in toxicity testing and drug dosing.

- Categorize the classes of toxicants/drugs and know specific examples
- State the routes of exposure to toxins/drugs;
- Explain the processes of absorption, metabolism and elimination of toxins/drugs; and
- Explain environmental and physiological factors that affect toxicant metabolism

UNIT 1 : Fundamentals of toxicology and dose response

14 hours

Scope of toxicology; why should we know about toxins/xenobiotics (drugs) and What makes a substance toxic? Grading toxicity, Use of animal studies for toxicity, *in vitro* toxicity, organ toxicity (liver and kidney toxicity). Indicators of toxicity/drug effects; biomarkers. Concentration and site of action, dose response, effect of route of administration, ED₅₀, LD₅₀/TD₅₀. Hazard and risk assessment, risk, acceptable daily intake (ADI) and tolerable daily intake (TDI).

UNIT 2 : Factors affecting toxic responses

14 hours

Disposition- Outline of toxin/drug uptake, entry to cells and systemic circulation. Effect of size, shape, solubility, and charge on their uptake. Major sites of absorption, liver, intestine, skin, role of transporters, role of plasma proteins in distribution, plasma levels of toxins/drugs, plasma half-life, excretion- disposition by kidney, biliary excretion. Metabolism- types of metabolic changes of foreign compounds, biotransformation/detoxification reactions, phase-1 and, phase -2 reactions, nature of phase-1 and phase 2 enzymes.

UNIT 3 : Targets of toxic damages and biochemical mechanism of toxicity 14 hours

Toxins/drugs causing liver, kidney, gall bladder, and lung damage, methods of identifying the damages.

Examples of biochemical toxicity mechanisms; chemical carcinogens - Benzo[a]pyrene, Tamoxifen.

Liver necrosis- carbon tetrachloride, Valproic Acid, and Iproniazid,

Kidney damage- Chloroform, Antibiotics- gentamycin,

Lung damage- 4-Ipomeanol,

Neurotoxicity- Isoniazid, parquet, primaquine, cyclophosphamide.

REFERENCES:

1. Biopharmaceuticals Biochemistry and Biotechnology 2nd Edn. Gary Walsh, John Wiley & Sons, Ltd, England, 2003.
2. Fundamentals of Experimental Pharmacology, Ghosh, M.N. 2nd Edition, Scientific Book Agency, Kolkatta, 1984.
3. Introduction to Biochemical Toxicology, 3rd Edn., Ernest Hodgson , Robert C. Smart; Wiley-Interscience; , 2001
4. Principles of Biochemical Toxicology, John A. Timbrell, 4th Edn. 2009, Taylor & Francis
5. Remington Pharmaceutical Sciences, Lippincott, Williams and Wilkins, 2000

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

SEMESTER IV
OPEN ELECTIVE 2
PLANT BIOCHEMISTRY

COURSE TITLE	PLANT BIOCHEMISTRY
COURSE CREDITS	03
TOTAL CONTACT HOURS	42
DURATION OF ESA	03
FORMATIVE ASSESSMENT MARKS	40
SUMMATIVE ASSESSMENT MARKS	60

Course outcomes: These topics will enable the students to

- Understand the plant cell, photosynthesis, transporters, and important primary metabolites.
- Illustrate plant growth regulators, plant's responses to various biotic and abiotic stresses.
- Explain about plant secondary metabolites and their functional importance.

UNIT 1 :

14 hours

Plant cell- structure and molecular components: Cytoskeleton- an overview. Plant cell division, cell cycle. Outlines of energy production in plant cells, Carbon assimilation and nitrogen assimilation.

An overview of photosynthesis: C₃, C₄ plants and crassulacean acid metabolism (CAM); photorespiration; Phytochromes, cryptochromes and phototropins. Non-protein thiols and sulfur cycle.

Plant cell membranes and membrane transport: Introduction to plant cell membranes and membrane constituents. Organization of transport systems across plant membranes; Different types of pumps operate at plant cell and organelle membranes; classification and importance of H⁺-ATPases. Ion channels-properties and significance; Aquaporins and water transport.

Important Primary metabolites of plants: Cellulose, starch, sucrose, oligosaccharides; fructans, gums, mucilages, poly unsaturated fatty acids, lignin, suberin, surface waxes, sulfides and sweet proteins.

UNIT 2 :

14 hours

Plant growth regulators: Auxins, cytokinins, gibberellins, abscisic acid, ethylene, brassinosteroids, polyamines, jasmonic acid, salicylic acid.

Plant responses to biotic and abiotic stresses: Introduction; Plant pathogens and diseases; plant defense systems - hypersensitive response; systemic acquired resistance; induced systemic resistance; Plant biotic stress response to pathogens and insects.

Plant abiotic stress responses: Salt stress, drought, and heavy metal stress responses; osmotic adjustment and significance of osmotic agents such as proline, sugar alcohols and quaternary ammonium compounds; An overview of oxidative stress and oxidative damage. Antioxidant enzymes and stress tolerance.

UNIT 3 :

14 hours

Plant secondary metabolites (Natural products):

Introduction; secondary metabolites (natural products) definition; classification of plant secondary metabolites (natural products). An overview of primary metabolism contribution to secondary metabolites biosynthesis.

Alkaloids: Classification of alkaloids; Contribution of amino acids for alkaloid biosynthesis; Isolation, purification and characterization of alkaloids. (S)-Seticuline-the chemical chameleon.

Phenolics: Classification of phenolic compounds; Classification of flavonoids; Classification of anthocyanins; Isolation, purification and characterization of phenolics.

Terpenoids: Classification of terpenoids, biogenic isoprene rule; volatile compounds; plant growth regulator terpenoids – gibberellin, abscisic acid; brassinosteroids and saponins Isolation, purification, and characterization of terpenoids

Biological properties of secondary metabolites: Role of secondary metabolites - in plants' defense; in insects' signalling, morphogenesis, and defense. Physiologically active secondary metabolites in modern medicine and therapeutic compounds for human ailments

REFERENCES:

1. Lehninger's Principles of Biochemistry - Nelson & Cox. CBS Publishers & Distributors, 2013
2. Principles of Biochemistry - Moran, Horton, Scrimgeour, Perry. Pearson, 5th Edition, 2011
3. Plant Biochemistry - P.M. Dey & J.B. Harborne. Hart Court Asia Pvt Ltd. 1997
4. Plant Biochemistry and Molecular Biology - P. Lea & Richard C Leegood., John Wiley & Sons. 1999
5. Introduction to Plant Biochemistry - Goodwin and Mercer. CBS Publisher and Distributors. 2005
6. Biochemistry and Molecular Biology of Plants - Buchanan, Grussem and Jones. American Society of Plant Physiologists. 2000
7. Natural Products from plants. Peter B. Kaufman, Leland J. Cseke, Sara Warber, James A. Duke, Harry L. Briemann, CRC Press, Boca Raton 1999.
8. Natural Products Targeting Clinically Relevant Enzymes. Paula B. Andrade, Patricia Valentao David M. Pereira. Wiley-VCH Verlag GmbH & Co 2017

9. Plant Cell Tissue and Organ Culture: Fundamental Methods - O.L. Gamborg & G.C. Phillips Narosa Publishers, New Delhi, 1995.
10. Kant R. Sweet proteins – Potential replacement for artificial low calorie sweeteners. Nutrition J. 2005; 4:5 doi:10.1186/1475-2891-4-5.
11. Misaka T. Molecular mechanisms of the action of miraculin, a taste-modifying protein. Seminars Cell Develop Biol. 24:222-225, 2013.
12. Temussi PA. Natural sweet macromolecules: how sweet proteins work. Cell Molec Life Sci CMLS. 63:1876-1888, 2006

PEDAGOGY: MOOC/DESK WORK/BOOK CHAPTER/PROBLEM SOLVING /ASSIGNMENT

Formative Assessment	
ASSESSMENT OCCASION	WEIGHTAGE IN MARKS
CLASS TEST (2 CLASS TESTS)	20
SEMINARS / CLASS WORK	10
ASSIGNMENT/ OPEN DISCUSSION	10
TOTAL	40

B Sc III & IV SEMESTERS
MODEL QUESTION PAPER
BIOCHEMISTRY

TIME: 3 h

MAX. MARKS: 60

NOTE: ALL SECTIONS ARE COMPULSORY

SECTION A

1. Answer any FIVE of the following

5 x 2 = 10

- a.
- b.
- c.
- d.
- e.
- f.
- g.

SECTION B

Answer any FOUR of the following

4 x 5 = 20

- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

SECTION C

Answer any THREE Questions

3 x 10 = 30

- 8.
- 9.
- 10.
- 11.
- 12.

Note: *Section C may include sub questions a, b*

BSc III & IV SEMESTERS
MODEL QUESTION PAPER
BIOCHEMISTRY
OPEN ELECTIVE

TIME: 3 h

MAX. MARKS: 60

NOTE: ALL SECTIONS ARE COMPULSORY

SECTION A

1. Answer any FIVE of the following 5 x 2 = 10
- a.
 - b.
 - c.
 - d.
 - e.
 - f.
 - g.

SECTION B

Answer any FOUR of the following 4 x 5 = 20

- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

SECTION C

Answer any THREE Questions 3 x 10 = 30

- 8.
- 9.
- 10.
- 11.
- 12.

Note: section C may include sub questions a, b

INTERNAL ASSESMENT (as on 4th October meeting proceedings)

DISCIPLINE CORE	DISCIPLINE /OPEN ELECTIVE	PRACTICLAS
60 + 40 (IA)	60 + 40 (IA)	25 + 25 (IA)
Class Test -20	Class Test -20	Continuous evaluation & class test - 15
Seminars /Class work - 10	Seminars /Class work – 10	Record / Viva - 10
Assignment /Open discussion - 10	Assignment /Open discussion - 10	


UNIVERSITY OF MYSORE
Estd. 1916

Vishwavidyanilaya Karyasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21

Dated:10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Biochemistry(UG)
(III & IV Semester) with effective from the Academic year
2022-23 as per NEP-2020.

- Ref:-**
1. Decision of Board of Studies in of Biochemistry (UG) meeting held on 28-07-2022.
 2. Decision of the Faculty of Science & Technology Meeting held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Biochemistry (UG) which met on 28-07-2022 has recommended & approved the syllabus and pattern of Examination of Biochemistry Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively has also approved the above said syllabus and hence it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft Approved by the Registrar


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Biochemistry, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Earth Science, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.


UNIVERSITY OF MYSORE
Estd. 1916

VishwavidyanilayaKaryasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21

Dated:10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Chemistry(UG) (III & IV Semester) with effective from the Academic year 2022-23 as per NEP-2020.

- Ref:-**
1. Decision of Board of Studies in of Chemistry (UG) meeting held on 29-08-2022.
 2. Decision of the Faculty of Science & Technology Meeting held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Chemistry (UG) which met on 29-08-2022 has recommended & approved the syllabus and pattern of Examination of Chemistry Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP -2020.

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B.Sc. (Honors) Degree Programme in Chemistry

SYLLABI OF III and IV SEMESTERS

NATIONAL EDUCATION POLICY (NEP)-2020

**Choice Based Credit System (CBCS) with Multiple Entry
and Exit Options**

2022-23 (Batch onwards)

1. measurements.
2. Determine the transport numbers.

Unit-I:

Separation methods:

Fundamentals of chromatography: General description, definition, terms and parameters used in chromatography, classification of chromatographic methods, criteria for selection of stationary and mobile phase and nature of adsorbents. Principles of paper, thin layer, column chromatography. Column efficiency, factors affecting the column efficiency, van Deemter's equation and its modern version.

3 Hrs.

Paper chromatography: Theory and applications

Thin layer chromatography (TLC): Mechanism, R_f value, efficiency of TLC plates, methodology—selection of stationary and mobile phases, development, spray reagents, identification and detection, qualitative applications. **4 Hrs.**

Solvent Extraction: Types- batch, continuous, efficiency, selectivity, distribution coefficient, Nernst distribution law, derivation, factors affecting the partition, relationship between % extraction and volume fraction, Numerical problems on solvent extraction. Solvent extraction of iron and copper. **4 Hrs.**

Ion exchange chromatography: resins, types with examples- cation exchange and anion exchange resins, mechanism of cation and anion exchange process and applications of ion- exchange chromatography (softening of hard water, separation of lanthanides, industrial applications). **3 Hrs.**

Unit-II:

Structure and Bonding-I: The ionic bond: Structures of ionic solids. Radius ratio rules, Calculation of some limiting radius ratio values, Coordination number 3 (planar triangle), Coordination number 4 (tetrahedral and square planar), Coordination number 6 (octahedral), Close packing. **3 Hrs.**

Classification of ionic structures:

Ionic compounds of the type AX (ZnS, NaCl, CsCl), Ionic compounds of the type AX₂ (Calcium fluoride (fluorite) and Rutile structure Layer structures CdI₂, Cadmium iodide structure. Limitations of radius ratio concept

2 Hrs.

Lattice energy and Born-Haber cycle, Derivation of Born-Landé equation and its drawbacks, Kapustinskii equation, solvation energy and solubility of ionic solids, polarizing power and polarizability, Fajan's rules with applications. Numerical problems

5 Hrs.

Covalent bond: Valence bond theory, The Lewis theory, The octet rule, Exceptions to the octet rule, Sidgwick- Powell theory. Valence shell electron pair repulsion (VSEPR) theory, Effect of lone pairs, electronegativity, isoelectronic principle, Examples using VSEPR theory: BF₃ and BF₄⁻, NH₃ and NH₄⁺, H₂O, PCl₅, ClF₃, SF₄, I₃⁻ and I₃⁺, SF₆, and IF₇. Limitations of VSEPR. **7Hrs.**

Unit-III:

Reaction Intermediates: Generation, structure, stability and reactions involving;

- i. **Carbocations:** Dienone-phenol and Pinacol-Pinacolone Rearrangement.
- ii. **Carbanions:** Perkin Reaction, Aldol condensation, Claisen-Schmitt condensation.
- iii. **Free Radicals:** Chlorination of methane, formation of gamma-xylene (lindane).
- iv. **Carbenes:** Singlet and triplet states, their relative stability. Riemeier-Tiemann, and Wolff rearrangement.
- v. **Nitrenes:** Singlet and triplet states, their relative stability. Hoffman and Curtius reactions.
- vi. **Arynes:** Formation, detection. Bromobenzene to aniline, (4+2) cycloaddition reaction.

8 Hrs.

Methods for Identifying Reaction Mechanism: Product analysis, Isolation and Identification of Intermediates, Stereochemical Evidences, Effect of Catalyst, crossover Experiments, Isotopic studies, Kinetic Studies.

6 Hrs.

Unit-IV:

Chemical Kinetics: Introduction, rate of reaction, order and molecularity with examples. Rate constant-definition and explanation. Differential and integrated form of rate expressions up to second order reactions, Derivation of expression of rate constant of second order reaction ($a=b$ and $a \neq b$), Problems on rate constant ($a=b$), Methods of determination of order of a reaction (half-life method, isolation method), temperature dependence of reaction rates; Arrhenius equation, activation energy, Numerical problems on Arrhenius equation in calculating energy of activation and rate constants. Collision theory of reaction rates, Lindemann's mechanism, qualitative treatment of the theory of absolute reaction rates. Experimental determination of kinetics of (i) inversion of cane sugar by polarimetric method (ii) spectrophotometric method for the reaction between potassium persulphate and potassium iodide.

7 Hrs.

Electrochemistry - I: Introduction, strong and weak electrolytes, definition with examples. Arrhenius theory of electrolytic dissociation. Merits and Demerits, Conductance, Specific conductance, equivalent and molar conductivity and their variation with dilution. Molar conductivity at infinite dilution. Numerical problems.

Kohlrausch's law of independent migration of ions and its applications, Debye-Hückel-Onsager equation. Ionic mobilities and their determinations, transference numbers and their relation to ionic mobility's, determination of transference numbers using Hittorf and Moving Boundary methods.

Applications of conductance measurement: (i) Degree of dissociation of weak electrolytes (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts (iv) conductometric titrations (acid base titrations only) and (v) Hydrolysis constants of salts. Numerical problems.

7 Hrs.

DSC-3: Chemistry-III Practical

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

Course objectives: To attain practical knowledge about:

1. Analytical skills in detecting the constituents present in unknown samples by systematically carrying out the qualitative analysis.
2. The methods of determining rates of chemical reactions.
3. Designing electrochemical cells and making measurements related to it.
4. Determination of physical characteristics of electrolytes using conductivity measurements in solution.
5. Adsorption phenomenon, mechanism and basic models to explain adsorption.
6. Simple techniques like conductometry to obtain physicochemical parameters of electrolytes.

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

1. Understand the chemical reactions involved in the detection of cations and anions.
2. Explain basic principles involved in classification of ions into groups in semi-micro qualitative analysis of salt mixture
3. Carryout the separation of cations into groups and understand the concept of common ion effect.
4. Understand the choice of group reagents used in the analysis.
5. Analyze a simple inorganic salt mixture containing two anions and cations
6. Use instruments like conductivity meter to obtain various physicochemical parameters.
7. Apply the theory about chemical kinetics and determine the velocity constants of various reactions.
8. Learn about the reaction mechanisms.
9. Interpret the behavior of interfaces, the phenomena of physisorption and chemisorption's and their applications in chemical and industrial processes.
10. Learn to fit experimental data with theoretical models and interpret the data

Part A: Inorganic Chemistry Practicals

Qualitative semi-micro analysis of mixtures containing 2 anions and 2 cations. Emphasis should be given to the understanding of different reactions.

The following cations and anions are suggested.

Cations: NH_4^+ , Pb^{2+} , Bi^{3+} , Cu^{2+} , Al^{3+} , Fe^{3+} , Co^{2+} , Cr^{3+} , Ni^{2+} , Zn^{2+} , Mn^{2+} , Ba^{2+} , Ca^{2+} , Sr^{2+} , Mg^{2+} , Na^+ , K^+ and Li^+ .

Anions: CO_3^{2-} , CH_3COO^- , Cl^- , Br^- , I^- , NO_3^- , BO_3^{3-} , SO_4^{2-} , $\text{C}_2\text{O}_4^{2-}$ and PO_4^{3-} .

Spot tests and flame tests to be carried out wherever possible.

Part B: Physical Chemistry Practicals

1. Determination of the enthalpy of neutralization of a strong acid with strong base.
2. Verification of Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal.
3. The study of kinetics of potassium persulphate and potassium iodide volumetrically.

- Determination of velocity constant for acid catalyzed hydrolysis of methyl acetate volumetrically.
- Determination of velocity constant for the saponification of ethyl acetate ($a = b$) volumetrically.
- Determination of equivalent conductivity of strong electrolyte and verification of DHO equation using meter bridge.
- Determination of dissociation constant of weak acid by conductivity method using meter bridge.
- Conductometric titration of strong acid and strong base.
- Conductometric titration of weak acid and strong base.
- Determination of the hydrolysis constant of aniline hydrochloride by conductometric method.
- Determination of solubility product of sparingly soluble salt by conductometric method.

IV SEMESTER

DSC-4: Chemistry-IV

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

Course Objectives:

- Principle, instrumentation and applications of spectrophotometry, nephelometry and turbidometry will be taught.
- Principle, types and applications of solvent extraction will be taught.
- Concept of stereochemistry and its importance will be taught.
- The various projection formulae and the techniques of designating the molecules in to R, S, D, L will be taught taking proper examples.
- The theory and concept of Cis-, Trans- isomerism and its importance and the techniques to differentiate between them will be taught taking examples.
- The structures of molecules/compounds/ions based on different models/theories.
- Properties of compounds based on bonding and structure.
- The fundamentals of thermodynamics including the laws, the concept of entropy and free energy functions and their applications.
- The concepts of surface chemistry, catalysis and their applications.

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

- Understand the importance of fundamental law and validation parameters in chemical analysis.
- Know how different analytes in different matrices (water and real samples) can be determined by spectrophotometric, nephelometric and turbidimetric methods.
- Explain the importance of Stereochemistry in predicting the structure and property of organic molecules.
- Predict the configuration of an organic molecule and able to designate it.

- Identify the chiral molecules and predict its actual configuration.
- Write the M.O. energy diagrams for simple molecules.
- Differentiate bonding in metals from their compounds.
- Learn important laws of thermodynamics and their applications to various thermodynamic systems.
- Understand adsorption processes and their mechanisms and the function and purpose of a catalyst.
- Apply adsorption as a versatile method for waste water purification.

Unit-I:

Quantitative analysis-Instrumental methods: Electromagnetic spectrum, absorption of electromagnetic radiation, Definition and units of frequency, wavelength, wave number, Beer's law, Beer-Lambert law derivation, deviations from Beer's law, limitations, construction of calibration graph (Plot of absorbance versus concentration), Evaluation Procedures- standard addition, Internal standard addition, validation parameters- detection limits, sensitivity, dynamic/linearity range, Instrumentation, single beam and double beam spectrophotometers, quantitative applications of colorimetry (determination of Fe, Mo, Cu, Ti and PO_4^{3-}) and numerical problems on application of Beer's law. **10 Hrs.**

Nephelometry and Turbidimetry: Introduction, principle, instrumentations of nephelometry and turbidimetry; effects of concentration, particle size and wavelength on scattering; choice between nephelometry, applications of nephelometry & turbidimetry (determination of SO_4^{2-} and PO_4^{3-}). **4 Hrs.**

Unit-II:

Structure and Bonding -II:

Concept of resonance, resonance energy, hybridization, types of hybridization, sp , sp^2 , sp^3 , dsp^2 , dsp^3 , d^2sp^3 , sp^3d^2 with one example each, and energetics of hybridization. Bent's rule, Limitations of Valence Bond Theory. **3 Hrs.**

Molecular Orbital theory: LCAO concept: s-s, s-p, p-p, p-d and d-d combinations of orbitals, bonding, nonbonding and antibonding molecular orbitals, non-bonding combinations of orbitals, Rules for linear combination of atomic orbitals.

Examples of molecular orbital treatment for homonuclear diatomic molecules: H_2 molecule, H_2^+ molecule ion, He_2 molecule, He_2^+ molecule ion, Li_2 molecule, Be_2 molecule, B_2 molecule, C_2 molecule, N_2 molecule, N_2^+ molecule ion, O_2 molecule, O_2^- and O_2^{2-} molecule ions.

M.O. Energy diagrams of heteronuclear diatomic molecules with examples (NO , NO^+ , CO and HCl). Calculation of bond order, relationship between bond order, bond energy, and bond length, magnetic properties based on MOT. **7 Hrs.**

Metallic Bonding: General properties of metals-conductivity, lustre, malleability and cohesive force. Crystal structures of metals and Bond lengths.

Theories of bonding in metals: Free electron theory, valence bond theory, molecular orbital or band theory of solids. Prediction of conducting properties of conductors, insulators and semiconductors, extrinsic and intrinsic semiconductors using M.O. theory. **4 Hrs.**

Unit-III:

Structure and Stereochemistry of Organic Compounds:

Concept of isomerism, types of isomerism. Projection formulae of chiral molecules- Fischer (glyceric acid), Newman (2,3-dibromobutane), Sawhorse (2,3-dibromobutane) and Fly-wedge (glyceric acid) projection formulae. Interconversion of projection formulae: Conversion of; Fisher into Sawhorse projection (tartaric acid), Sawhorse into Fisher projection (2,3-dibromobutane), Sawhorse to Newman to Fisher projection (3-amino-3-bromo-2-chlorobutan-2-ol), Fisher to Newman to Sawhorse (3-chloro-2,4-dihydroxybutanal), Fisher into Fly-wedge formula and vice-versa (2-bromo propanoic acid),

4 Hrs.

Geometrical isomerism: Cause of geometrical isomerism. Cis-trans isomerism (cinnamic acid, but-2-enedioic acid) and syn-anti isomerism (benzaldoxime, ethyl methyl ketoxime), E/Z notations with examples following C.I.P rules.

Optical Isomerism: Optical activity, conditions for optical activity-Elements of symmetry (plane, centre, C_2 -axis, rotation-reflection with examples). Specific rotation, Chirality/Asymmetry, Enantiomers-definition with examples, properties, Molecules with two or more chiral centres, Diastereoisomers-definition with examples (threo and erythro isomers), properties. Meso compounds- definition with examples. optical isomerism in tartaric acid, and biphenyls. Asymmetric synthesis, Walden inversion. Racemic modification- Definition with examples. Resolution-definition with examples, chemical and biochemical methods of resolution, Relative and absolute configuration, D/L convention, limitations, and R/S designations-CIP rules with examples.

10 Hrs.

Unit-IV:

First Law of Thermodynamics: Introduction, system, surroundings, types of systems. Thermodynamic Processes (isothermal, adiabatic, isochoric, isobaric and cyclic), Nature of Heat and Work, Internal Energy, First Law of Thermodynamics, Enthalpy of a System, Work done in isothermal and adiabatic expansion of an ideal gas, Numerical problems, Joule - Thomson Expansion, Relation between Joule-Thomson coefficient and other thermodynamic parameters.

Second law of Thermodynamics: Limitations of first law of thermodynamics. Reversible and Irreversible Processes, Concept of entropy, thermodynamic scale of temperature, Statements of the Second Law of Thermodynamics, molecular and statistical interpretation of entropy, Calculation of entropy change for reversible and irreversible processes, Free Energy Functions: Gibbs and Helmholtz energy, variation of S, G, A with T, V and P, Numerical problems, Free energy change and spontaneity, Gibbs-Helmholtz equation.

Third Law of Thermodynamics: Statement of third law, concept of residual entropy, calculation of absolute entropy of molecules.

10 Hrs.

Surface Chemistry Adsorption: Introduction, types of adsorptions with examples. Types of adsorption isotherms. Freundlich adsorption isotherm (only equation), its limitations. Langmuir adsorption isotherm (derivation to be done) and BET equation (derivation not included).

Catalysis: Types of Catalysis (positive, negative, auto and induced), characteristics of catalysis, and theories with examples (intermediate compound theory and adsorption

theory), Theory of acid base catalysis, Michaelis-Menten mechanism. Heterogeneous catalysis: surface reactions, unimolecular, bimolecular surface reactions. Autocatalysis with examples. Applications: Design process to removal of toxic compounds from industrial wastewater and treatment of portable water requirements. **4 Hrs.**

DSC-4: Chemistry-IV Practical

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

Course objectives:

1. To impart skills related to preparation of stock and working solutions and handling of instrumental methods.
2. To know the principle of colorimetric analysis and construction of calibration plot.
3. To understand the chemistry involved in colorimetric determination of metal ions and anions.
4. To determine R_f values of different metal ions present in a mixture.
5. To impart knowledge on the importance of functional groups in organic compounds.
6. Techniques to identify the functional groups in a compound by performing physical and chemical tests.
7. To record its melting point/boiling point.
8. To prepare suitable derivative for that compound and to characterize it.

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

1. Understand the importance of instrumental methods for quantitative applications.
2. Apply colorimetric methods for accurate determination of metal ions and anions in water or real samples.
3. Understand how functional group in a compound is responsible for its characteristic properties.
4. Learn the importance of qualitative tests in identifying functional groups.
5. Learn how to prepare a derivative for particular functional groups and how to purify it.

PART-A: Analytical Chemistry Practicals

1. Colorimetric determination of copper using ammonia solution.
2. Colorimetric determination of iron using thiocyanate solution.
3. Colorimetric determination of nickel using DMG solution.
4. Colorimetric determination of titanium using hydrogen peroxide.
5. Colorimetric determination of nitrite in a water sample (diazo coupling Reaction/Griess reagent).
6. Colorimetric determination of phosphate as ammonium phosphomolybdate.
7. Determination of R_f values of two or three component systems by TLC.
8. Separation of different metal ions by paper chromatography/ Solvent extraction of iron using oxine solution (demonstration).

PART-B: Organic Chemistry Practical

Qualitative analysis of mono and bifunctional Organic compounds: Benzoic acid, Salicylic acid, *p*-Nitro benzoic acid, Anthranilic acid, *p*-Chloro benzoic acid, *o*-Cresol, *p*-Cresol, Resorcinol, *o*- Nitrophenol, *p*-nitrophenol, *o*-Nitro aniline, *p*-Nitroaniline, *p*-Toluidine, *p*-Chloroaniline, *p*- Bromoaniline, Ethyl Salicylate, Salicylaldehyde, Acetophenone, Urea, Thiourea, Aniline, Benzldehyde, acetanilide, Naphthalene, Chlorobenzene, *p*-Dichlorobenzene, *p*-Nitro toluene, Benzamide etc. (At least 6-8 compounds to be analyzed in a semester).

REFERENCE BOOKS:

1. Fundamental of Analytical Chemistry, D.A. Skoog, D.M. West, Holler and Crouch, 8th Ed., Saunders College Publishing, New York (2005).
2. Analytical Chemistry, G.D. Christian, 6th edition, Wiley-India (2007).
3. Quantitative Analysis, R.A. Day and A.L. Underwood, 6th edition, PHI Learning Pvt. Ltd. New Delhi (2009).
4. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, 6th edition, Third Indian Reprint, Pearson Education Pvt. Ltd. (2007).
5. Organic Reaction Mechanism by V.K. Ahluwalia and R.K. Parashar (Narosa Publishers).
6. Organic Chemistry by S.M. Mukherji, S.P. Singh and R.K. Kapoor (Narosa Publishers).
7. Morrison R.N and Boyd R.N, Organic Chemistry, Darling Kindersley (India) Pvt. Ltd. (Pearson Education).
8. Finar I.L, Organic Chemistry (Volume I); Finar I.L (Volume II) Stereochemistry and the Chemistry of Natural Products., Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
9. Kalsi P.S. Stereochemistry, conformation and Mechanism, New age International.
10. Eliel E.L and Wilen S.H, Stereochemistry of Organic Compounds, Wiley, (London).
11. Vogel's Textbook of Quantitative Chemical Analysis, J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas, 6th Ed. Third Indian Reprint, Pearson Education Pvt. Ltd. (2007).
12. Vogel's Text Book of Qualitative Chemical Analysis, ELBS.
13. Peter Atkins & Julio De Paula, Physical Chemistry, 9th Ed., Oxford University Press (2010).
14. G W Castellan, Physical Chemistry, 4th Ed., Narosa (2004).
15. R G Mortimer, Physical Chemistry 3rd Ed., Elsevier: Noida, UP (2009).
16. B R Puri, L R Sharma and M S Pathania, Principal of Physical Chemistry, Vishal Publishing Co.
17. B S Bahl, G D Tuli and Arun Bahl, Essentials of Physical Chemistry, S Chand & Comp. Ltd.
18. A S Negi and S C Anand, A textbook of Physical Chemistry, New Age International.
19. B N Bajpai, Advanced Physical chemistry, S Chand and Company ltd.
20. R L Madan, Chemistry for Degree Students, Semester I, II, III and IV, S Chand and

- Company Ltd.
21. P L Soni, O P Dharmarha and U N Dash, Textbook of Physical Chemistry, Sultan Chand and Sons.
 22. Vogel's Qualitative analysis, Revised by G. Svehla, Pearson education, 2002
 23. J B Yadav, Advanced Physical Chemistry, Krishna Prakashan Media (P) Ltd, Meerut.
 24. Khosla, B. D.; Garg, V. C. & Gulati, A. Senior Practical Physical Chemistry, S. Chand & Co.: New Delhi (2011).
 25. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. Experiments in Physical Chemistry 8th Ed.; McGraw-Hill: New York (2003).
 26. Halpern, A. M. & McBane, G. C. Experimental Physical Chemistry 3rd Ed.; W.H. Freeman & Co.: New York (2003).

Open Elective Course

III SEMESTER

OEC-3: Atomic Structure, Bonding and Concepts in Organic Chemistry

(L:T:P = 3:0:0) Contact Hours: 42 Credits: 3 Workload:3Hours/Week

Course Objectives:

1. To develop an understanding of principles of atomic structure.
2. To know the importance of quantum numbers, writing of electronic configurations and representation of orbitals.
3. To develop an understanding of the periodic trends.
4. To understand the nature of bonding and to predict the shapes of molecules.
5. To construct MO energy level diagrams and predict the properties of molecules.
6. To understand the formation of sigma and pi bonds and the bond strength.
7. To study the classification of organic reactions.
8. To learn nomenclature preparation and reactions of alkanes, alkenes, alkynes and stability of alicyclic compounds.

Course Specific Outcomes: On completion of the course the student will learn and be able to understand/explain;

1. The concept of atomic structure, significance of quantum numbers, filling of electrons of atoms/ions in various orbitals as per rules.
2. The trends in periodic properties.
3. The structures of ionic solids, applications of B-H cycle, solubility of compounds and consequences of polarization of ions.
4. The shapes of molecules/ions based on VSEPR theory.
5. The construction of MO energy level diagrams and prediction of properties of molecules/ions like bond order, bond energies, bond lengths and magnetic properties.
6. The formation of sigma and pi bonds and the bond strength.
7. The classification of organic reactions.

8. Nomenclature preparation, and reactions of alkanes, alkenes, alkynes and stability of alicyclic compounds.

Unit I: Atomic Structure and Periodic Properties

History of an atom. Idea of de Broglie matter waves. Heisenberg uncertainty principle. Schrödinger wave equation, significance of wave functions, Bohr's model of hydrogen atom and its limitations. Quantum numbers and their importance, atomic orbitals and shapes of s, p, d orbitals, multi-electron atoms, Aufbau and Pauli exclusion principle and Hund's multiplicity rule- Electronic configurations of the elements (atomic no. up to 30), effective nuclear charge and shielding. **8 Hrs.**

Periodic Properties: Atomic radius, Covalent, ionic and van der Waal radii-explanation with examples. Definition and periodicity of the following properties - ionic radii, ionization potential, electron affinity and electronegativity, methods of determination of electronegativity. Factors affecting the values of ionization energy. **6 Hrs.**

Unit II: Chemical Bonding:

Ionic Solids- Ionic structures (NaCl, CsCl, TiO₂, ZnS), radius ratio rule and coordination number, limitation of radius ratio rule, lattice energy and Born-Haber cycle, solvation energy and solubility of ionic solids, polarizing power and polarizability of ions, Fajan's rule and their consequences. **4 Hrs.**

Covalent Bond - Valence bond theory and its limitations, directional characteristics of covalent bond, various types of hybridization with examples and shapes of simple inorganic molecules and ions. Shapes of NH₃, I₃⁺, I₃⁻, SF₄, ClF₃, IF₅, ICl₂⁻ and H₂O using valence shell electron pair repulsion (VSEPR) theory, linear combination of atomic orbitals (LCAO), bonding, nonbonding and antibonding molecular orbitals, physical picture of bonding and antibonding wave functions. Applications of MO theory to explain the stability of homo dinuclear (He₂, N₂, O₂, F₂, C₂) and hetero dinuclear (NO and CO) molecules. Comparison of M.O. and V.B. Models. **7 Hrs.**

Metallic bond-free electron, Band theory-electrical properties of metals, semiconductors and insulators. Weak interactions - Hydrogen bonding and its consequences, van der Waals forces. **3 Hrs.**

Unit III: Bonding and molecular structure and hydrocarbons

Bonding and molecular structure: Introduction to organic chemistry, atomic orbitals, sigma and pi bond formation-molecular orbital [MO] method, sp, sp² and sp³ hybridization, bond length, bond dissociation energies and bond angles (open chain and cyclic compounds). Electronegativity and polarity of the bonds. Classification and reactions of organic compounds (with examples). **7 Hrs.**

Alkanes, Alkenes and Alkynes: Definition, Nomenclature, preparations (any two methods). Reactions: Electrophilic, nucleophilic and free radical addition reactions.

Alicyclic compounds: Nomenclature, preparation and stability of cyclopropane, cyclobutane, cyclopentane and cyclohexane. **7 Hrs.**

REFERENCE BOOKS:

1. Concise Inorganic Chemistry, J. D. Lee, ELBS, 1996.
2. Inorganic Chemistry, A. K. Das.
3. Inorganic Chemistry: Principles of Structure and Reactivity, Huheey, J. E., Keiter, E.A., Keiter, R.L. & Medhi, O. K. Pearson Education India, 2006.
4. Inorganic Chemistry, Shriver, D.F. & Atkins, P.W. Oxford University Press.
5. Schaum's Outline Series Theory and Problems of Organic Chemistry.SI (metric) Ed Herbert Meislich, Howard Nechamkin and Jacob Sharefkin.
6. Organic chemistry. Robert T. Morrison Robert N. Boyd, 6th Ed.
7. Organic Chemistry Volume-1, I.L. Finar.

IV SEMESTER

OEC-4: Electrochemistry, Corrosion and Metallurgy

(L:T:P = 3:0:0) Contact Hours: 42 Credits: 3 Workload:3Hours/Week

Course Objectives: This course will deal with

1. Types of conductance, concept of electrolytes, electrolysis, redox reactions and EMF.
2. Concept of different types of electrochemical cells, Types of electrodes and electrode potential. Application of electrochemical series.
3. Basic principles and applications of conductometric, potentiometric and pH titrations.
4. Different types of Batteries their principle construction and working - lead-acid storage and lithium ion battery. Study of Fuels cells.
5. Concept of corrosion, types of corrosion and its prevention by different methods. Introduction to electroplating.
6. Introduction to ores and minerals, extraction of metals from their ores, and purification. Eg., Manganese, Titanium and Uranium. Study of alloys, classification, production and uses of alloys.

Course Specific Outcomes: Upon completion of the course students will be able to;

1. Understand the concept of conductance in electrolytic solutions, electrolysis and redox reactions involved in electrode reactions.
2. Learn the different types of electrochemical cells, their symbolical representation and application of electrochemical series.
3. Apply conductometric, potentiometric and pH titrations.
4. Know the principle, construction and working of batteries.
5. Understand different types of corrosion and its prevention by different methods.
6. Learn the methods of extraction of metals from their ores and purification.

Unit I: Electrochemistry: Conductance, specific and molar conductance Types of Electrolytes, Conductivity in electrolytic solution, Electrolysis, Kohlrausch's law and its application, Equivalent Conductance of Weak electrolyte at Infinite dilution. Oxidation -reduction reactions, electrode potential, EMF of an electrochemical cell, cell

reaction, Daniel cell, dry Cells - electrolytic and Galvanic cell, Representation of a cell. Standard electrode potential, Nernst equation (No derivation) and its application to chemical cell, Electrochemical series and its importance. Types of Electrodes.

Basic Principles of (i) Conductometric titrations- HCl Vs NaOH, CH₃COOH Vs NaOH

Potentiometric titrations: Acid-base titration HCl Vs NaOH, Redox titration (FAS Vs K₂Cr₂O₇) Determination of PH using glass electrode. **12Hrs.**

Batteries- Primary and Secondary batteries, Battery components and their role. Working of the following Batteries- Lead acid, Lithium Storage, Batteries, Fuel cells. **2 Hrs.**

Unit II: Corrosion: Introduction, definition, Types of Corrosion, Corrosion rate, Factors affecting corrosion rate, Metallic factor-purity, electrode potential of metal, hydrogen over voltage, nature of corrosion product. Environmental Factors-Temperature, pH of the medium, humidity, presence of impurities, electrical conductivity of the medium, velocity of the medium, concentration of the medium.

Prevention of Corrosion: Material selection - Metals and alloys, metal purification, non-metallic, Alteration of environment - Changing media, inhibitors, Design-wall thickness, design rules, Coating-Metallic and other inorganic coatings, organic coating.

Electroplating: Introduction, Electroplating of chromium (hard and decorative). Electroless plating: Introduction, distinction between electroplating and electroless plating processes. Electroless plating of copper. **14 Hrs.**

Unit III: Metallurgy: Introduction: Ore, minerals, important ores of some common elements in India, General Principles of pyrometallurgy, roasting, Calcination, Gangue, Smelting, Flux, Gravity separation, Froth flotation process, leaching. Techniques employed for Purification of metal (Distillation process, Bessemerization, Electro-refining, Van Arkel and De Boer's Filament. **7 Hrs.**

Extraction of metals: Extraction of Manganese (Pyrolusite), Titanium (Ilmanite) and Uranium. **4 Hrs.**

Alloys: Introduction, Classification of alloys, commercially important alloys, gold karats, **Production of Ferro alloys;** Ferrochrome, Ferro Manganese, Uses of alloys.

4Hrs.

REFERENCE BOOKS:

1. Barrow. G.M, Physical Chemistry, Tata McGraw-Hill, (2007).
2. An introduction to electrochemistry, Samuel Glasstone, East-West edition New Delhi, (1942).
3. Text book of physical chemistry, Samuel Glasstone, 2ndEdition, Mac Millan India Ltd, (1991).
4. Principles and applications of Electrochemistry, D. R. Crow, 3rd edition, Chapman Hall London, (1988).
5. Fundamentals of electrochemical deposition, Milan Paunovic and Mordechay Schlesinger, Wiley Interscience Publications, New York, (1998).

6. Engineering Chemistry, V R Kulkarni and K Ramakrishna Reddy, New Age International, (2015).
7. Electrochemistry and Corrosion Science, Nestor Perez, Springer (india) Pvt. Ltd., (2004).
8. Principles and Prevention of Corrosion, D. A. Jones, Macmillan Publ. Co., (1996).
9. Essential of Materials Science and Engineering, Donald R. Askeland, Thomson Learning, 5th Edition, (2006).
10. Introduction to Engineering Materials, B. K. Agarwal, Tata McGraw Hill, 1st Edition.
11. Material Science and Engineering, V. Raghavan, PHI Learning, 5th Edition.
12. Engineering Materials and Metallurgy, R. K. Rajput, S. Chand - 1st Edition, (2011).

Scheme of Examination for DSC-3 and DSC-4 (III and IV Semesters): Credits (4:0:0)

Continuous Internal Assessment	Marks		
	Assignment	Test	Total
C1	10	10	20
C2	10	10	20
Semester End Examination	Duration: 02 Hours		
C3			60
Total Marks			100

Question Paper pattern for DSC-3 and DSC-4 (III and IV Semesters)

Duration: 02 Hours		Max. Marks: 60
Part-A	Answer any six out of eight questions (Two questions from each unit)	6 x 2 = 12
Part-B (Analytical Chemistry)	Answer any two out of three questions	2 x 6 = 12
Part-C (Inorganic Chemistry)	Answer any two out of three questions	2 x 6 = 12
Part-D (Organic Chemistry)	Answer any two out of three questions	2 x 6 = 12
Part-E (Physical Chemistry)	Answer any two out of three questions	2 x 6 = 12
Sub-questions Pattern: (3 + 3)/(4 + 2)/(2 + 2 + 2)		

Scheme of Examination for DSC-3 and DSC-4 practical (III and IV Semesters) Credits (0:0:2)

Continuous Internal Assessment	Marks			
	Test	Continuous assessment/ Attendance	Record	Total
C1	10	-	--	10
C2	--	10	05	15
Semester End Examination	Duration: 04 Hours			
C3				25
Total Marks				50

Scheme of valuation: Practical

III Semester: Inorganic and Physical Chemistry Practical

Part-A: Semimicro Qualitative Inorganic Analysis

13 Marks

(Two acid radicals and two basic radicals be given, two radicals in a group be avoided)

DISTRIBUTION OF MARKS		
Preliminary tests: State, color, solubility		1 Mark
Identification of 2 anions:	Group Identification: 1 + 1 Mark	2 Mark
	Confirmatory tests: 1 + 1 Mark	2 Mark
Group Separation of cations	Group Identification: 1 + 1 Mark	2 Mark
Identification of 2 cations:	Confirmatory tests: 2 + 2 Mark	4 Mark
	Ionic equations for CT tests: 1 + 1 Mark	2 Mark

Part-B: Physical Chemistry Practical

12 Marks

The following experiments be given, but not more than two candidates be given the same experiment.

1. The study of kinetics of potassium persulphate and potassium iodide volumetrically.
2. Determination of velocity constant for acid catalyzed hydrolysis of methyl acetate.
3. Determination of velocity constant for the saponification of ethyl acetate (a = b) volumetrically.
4. Determination of equivalent conductivity of strong electrolyte and verification of DHO equation.
5. Determination of dissociation constant of weak acid by conductivity method.
6. Conductometric titration of strong acid and strong base.
7. Conductometric titration of weak acid and strong base.

DISTRIBUTION OF MARKS (For Experiments 1, 2 and 3)		
k values	5 Constant values	7 Marks
	4 Constant values	6 Marks
	3 Constant values	5 Marks
	Any other values	3 Marks
Graph (straight line)		2 Marks
Unit of k		1 Mark
Calculation		2 Marks

DISTRIBUTION OF MARKS (For Experiments 4 and 5)	
Determination of cell constant	3 Marks
Determination of specific conductance	2 Marks
Determination of equivalent conductance	3 Marks
SI unit of k and λ (1 + 1 Mark)	2 Marks
Verification of DHO or k_a Calculations	2 Marks

DISTRIBUTION OF MARKS (For Experiments 6 and 7)		
Deviation	$\pm 0.2 \text{ cm}^3$	8 Marks
	$\pm 0.3 \text{ cm}^3$	6 Marks
	$\pm 0.4 \text{ cm}^3$	4 Marks
	Any other value	3 Marks
Graph		2 Marks
Calculation of Normality		1 Mark
Calculation of weight/dm ³		1 Mark

IV Semester: Analytical and Organic Chemistry Practical

Part-A: Analytical Chemistry Experiments

13 Marks

Any one of the Colorimetric determination experiments be given, but not more than two candidates be given the same experiment.

- Colorimetric determination of copper using ammonia solution.
- Colorimetric determination of iron using thiocyanate solution.
- Colorimetric determination of nickel using DMG solution.
- Colorimetric determination of titanium using hydrogen peroxide.
- Colorimetric determination of nitrite in a water sample (diazo coupling Reaction/Griess reagent).
- Colorimetric determination of phosphate as ammonium phosphomolybdate.

DISTRIBUTION OF MARKS (For all colorimetric determinations)		
Preparation of solutions		4 Marks
Determination of λ_{\max}		2 Marks
Accuracy	$\pm 5\%$	5 Marks
	$\pm 10\%$	3 Marks
	Any other value	2 Marks
Graph		2 Marks

Part-B: Qualitative Organic Analysis

12 Marks

DISTRIBUTION OF MARKS	
Preliminary tests	2 Marks
Physical constant	1 Mark
Detection of elements (one each)	3 Marks
Solubility (complete chart/table)	2 Marks
Functional group tests (minimum two important tests)	3 Marks
Naming and structure	1 Mark

No.AC2(S)/151/2020-21

Dated: 10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Computer Science (UG) (III & IV Semester) with effective from the Academic year 2022-23 as per NEP-2020.

- Ref:-**
1. Decision of Board of Studies in of Computer Science (UG) meeting held on 26-08-2022.
 2. Decision of the Faculty of Science & Technology Meeting held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Computer Science (UG) which met on 26-08-2022 has recommended & approved the syllabus and pattern of Examination of Computer Science Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively has also approved the above said syllabus and hence it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft Approved by the Registrar


Deputy Registrar (Academic)
Deputy Registrar (Academic)

University of Mysore
Mysore-570 005

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Computer Science, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Earth Science, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council, Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy

Curriculum for BCA

Semester	Core Courses	Hour / Week		DS Elective Courses	Hours/ Week
		Theory	Lab		
III	Database Management Systems	3			
	C# and .NET Technologies	3			
	Computer Networks	3			
	DBMS Lab		4		
	C# and .NET Technologies Lab		4		
IV	Python Programming	3			
	Multimedia Animation	3			
	Operating System Concepts	3			
	Multimedia Animation Lab		4		
	Python Programming Lab		4		

Open Source Tools (Skill Enhancement Course: SEC for BCA Course)

Semester: III

Course Title: Open Source Tools	Course Credits: 2 (1L+0T+2P)
Semester: III	Duration of SEE: 01 Hour
Total Contact Hours: 13 hours of theory and 26-28 hours of practicals	SEE: 30 Marks IA: 20 Marks

Course Outcomes (COs):

- Recognize the benefits and features of Open Source Technology and to interpret, contrast and compare open source products among themselves
- Use appropriate open source tools based on the nature of the problem
- Write code and compile different open-source software.

Course Content (Open Source Tools)

Module	Details of topic	Duration
Module 1: Open Source Softwares	i. Introduction to Open sources, Need of Open Sources, Open Source –Principles, Standard Requirements, Advantages of Open Sources. ii. Free Software – FOSS iii. Licenses – GPL, LGPL, Copyrights, Patents, Contracts & Licenses and Related Issues iv. Application of Open Sources. Open Source Operating Systems : FEDORA, UBUNTU	06 hours
Module 2: Programming with case studies	i. Usage of design Tools like Argo UML or equivalent ii. Version Control Systems like Git or equivalent iii. Bug Tracking Systems (Trac, BugZilla) iv. BootStrap v. Apache vi. Berkeley Software Distribution vii. Mozilla (Firefox) viii. Wikipedia ix. Joomla x. GNU Compiler Collection xi. Libre Office	07 hours

Text Book:

1. Kailash Vadera, Bhavyesh Gandhi, “Open Source Technology”, Laxmi Publications Pvt. Ltd 2012, 1st Edition.

Reference Book:

1. Fadi P. Deek and James A. M. McHugh, “Open Source: Technology and Policy”, Cambridge Universities Press 2007.

Model Syllabus for BCA (Basic and Honors), Semesters III and IV

Semester: III

Course Title: Database Management Systems	Course code: CAC07
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the various database concepts and the need for database systems.
- Identify and define database objects, enforce integrity constraints on a database using DBMS.
- Demonstrate a Data model and Schemas in RDBMS.
- Identify entities and relationships and draw ER diagram for a given real-world problem.
- Convert an ER diagram to a database schema and deduce it to the desired normal form.
- Formulate queries in Relational Algebra, Structured Query Language (SQL) for database manipulation.
- Explain the transaction processing and concurrency control techniques.

Unit	Description	Hours
1	<p>Database Architecture: Introduction to Database system applications. Characteristics and Purpose of database approach. People associated with Database system. Data models. Database schema. Database architecture. Data independence. Database languages, interfaces, and classification of DBMS.</p> <p>E-R Model: Entity-Relationship modeling: E – R Model Concepts: Entity, Entity types, Entity sets, Attributes, Types of attributes, key attribute, and domain of an attribute. Relationships between the entities. Relationship types, roles and structural constraints, degree and cardinality ratio of a relationship. Weak entity types, E -R diagram.</p>	14
2	<p>Relational Data Model: Relational model concepts. Characteristics of relations. Relational model constraints: Domain constraints, key constraints, primary & foreign key constraints, integrity constraints and null values</p> <p>Relational Algebra: Basic Relational Algebra operations. Set theoretical operations on relations. JOIN operations Aggregate Functions and Grouping. Nested Sub Queries-Views.</p>	14

3	<p>Data Normalization: Anomalies in relational database design. Decomposition. Functional dependencies – Axioms, minima and maxima cover. Normalization. First normal form, Second normal form, Third normal form. Boyce-Codd normal form.</p> <p>Query Processing Transaction Management: Introduction Transaction Processing. Single user & multiuser systems. Transactions: read & write operations. Need of concurrency control: The lost update problem, Dirty read problem. Types of failures. Transaction states. Desirable properties(ACID properties) of Transactions.</p>	14
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References:

1. Fundamentals of Database Systems, Ramez Elamassri, Shankant B. Navathe, 7th Edition, Pearson, 2015
2. An Introduction to Database Systems, Bipin Desai, Galgotia Publications, 2010.
3. Introduction to Database System, C J Date, Pearson, 1999.
4. Database Systems Concepts, Abraham Silberschatz, Henry Korth, S.Sudarshan, 6th Edition, McGraw Hill, 2010.
5. Database Management Systems, Raghu Rama Krishnan and Johannes Gehrke, 3rd Edition, McGraw Hill, 2002

Course Title: DBMS Lab	Course code: CAC07P
Total Contact Hours: 52	Hours/week : 04
Formative Assessment Marks: 25	Course Credits: 02
Exam Marks: 25	Duration of Exam: 03 Hours

Course Outcomes (COs):

Student would be able to create tables, execute queries

1. Execute a single line query and group functions.
2. Execute DDL Commands.
3. Execute DML Commands
4. Execute DCL and TCL Commands.
5. Implement the Nested Queries.
6. Implement Join operations in SQL
7. Create views for a particular table
8. Implement Locks for a particular table

Activity 1:

Database: Student (DDL, DML Statements)

Table: Student

Name	RegNo	Class	Major
Smith	17	1	CS
Brown	8	2	CS

Table: Course

CourseName	CourseNumber	CreditHours	Department
Introduction to Computer Science	CS1310	4	CS
Data Structure	CS3320	4	CS
Discrete Mathematics	MATH2410	3	MATH
Database Management Systems	CS3380	3	CS

Table: Section

Section_Identifier	CourseNumber	Year	Instructor
85	MATH2410	98	King
92	CS1310	98	Andreson
102	CS3320	99	Knuth
112	MATH2410	99	Chang
119	CS1310	99	Andreson
135	CS3380	99	Stone

Table: Grade_Report

RegNo	Section_Identifier	Grade
17	112	B
17	119	C
8	85	A
8	92	A
8	102	B
8	135	A

- Create Tables using create statement
- Insert rows to individual tables using insert statement
- Alter table section add new field section and update the records
- Delete brown's grade report
- Drop the table section

Activity 2: (Select clause, Arithmetic Operators)

Database: Employee

Create Following tables and insert tuples with suitable constraints

Table: Employee

Emp_Id	First_Name	Last_Name	Hire_Date	Address	City
1001	George	Smith	11-May-06	83 first street	Paris
1002	Mary	Jones	25-Feb-08	842 Vine Ave	Losantiville
1012	Sam	Tones	12-Sep-05	33 Elm St.	Paris
1015	Peter	Thompson	19-Dec-06	11 Red Road	Paris
1016	Sarath	Sharma	22-Aug-07	440 MG Road	New Delhi
1020	Monika	Gupta	07-Jun-08	9 Bandra	Mumbai

Table : Empsalary

Emp_Id	Salary	Benefits	Designation
1001	10000	3000	Manager
1002	8000	1200	Salesman
1012	20000	5000	Director
1015	6500	1300	Clerk
1016	6000	1000	Clerk
1020	8000	1200	Salesman

Write queries for the following

1. To display FIRSTNAME, LASTNAME, ADDRESS AND CITY of all employees living in PARIS.
2. To display the content of employee table in descending order of FIRSTNAME
3. Select FIRSTNAME and SALARY of salesman
4. To display the FIRSTNAME, LASTNAME, AND TOTAL SALARY of all employees from the table EMPLOYEE and EMPSALARY. Where TOTAL SALARY is calculated as SALARY+BENEFITS
5. List the Names of employees, who are more than 1 year old in the organization
6. Count number of distinct DESIGNATION from EMPSALARY
7. List the employees whose names have exactly 6 characters
8. Add new column PHONE_NO to EMPLOYEE and update the records
9. List employee names, who have joined before 15-Jun-08 and after 16-Jun-07
10. Generate Salary slip with Name, Salary, Benefits, HRA-50%, DA-30%, PF-12%, Calculate gross. Order the result in descending order of the gross.

Activity 3: (Logical, Relational Operators)

Database: Library

Create Following **tables** and insert **tuples** with suitable constraints

Table: Books

Book_Id	Book_Name	Author_Name	Publishers	Price	Type	Quantity
C0001	The Klone and I	Lata Kappor	EPP	355	Novel	5
F0001	The Tears	William Hopkins	First Publ	650	Fiction	20
T0001	My First C++	Brain & Brooke	ERP	350	Text	10
T0002	C++ Brainwork's	A.W.Rossaine	TDH	350	Text	15
F0002	Thunderbolts	Ana Roberts	First Publ.	750	Fiction	50

Table: Issued

Book_Id	Quantity_Issued
T0001	4
C0001	5
F0001	2
T0002	5
F0002	8

Write queries for the following

1. To show Book name, Author name and price of books of **First Publ.** publisher
2. Display Book id, Book name and publisher of books having quantity more than 8 and price less than 500
3. Select Book id, book name, author name of books which is published by other than ERP publishers and price between 300 to 700
4. Generate a Bill with Book_id, Book_name, Publisher, Price, Quantity, 4% of VAT "Total"
5. Display book details with book id's C0001, F0001, T0002, F0002 (Hint: use IN operator)
6. Display Book list other than, type Novel and Fiction
7. Display book details with author name starts with letter 'A'
8. Display book details with author name starts with letter 'T' and ends with 'S'
9. Select Book_Id, Book_Name, Author Name , Quantity Issued where Books.Books_Id = Issued.Book_Id
10. List the book_name, Author_name, Price. In ascending order of Book_name and then on descending order of price

Activity 4: (Date Functions)

Database: Lab

Create Following **table** and insert **tuples** with suitable constraints

Table: Equipment_Details

No.	ItemName	Costperitem	Quantity	Dateofpurchase	Warranty	Operational
1	Computer	30000	9	21/5/07	2	7
2	Printer	5000	3	21/5/06	4	2
3	Scanner	8000	1	29/8/08	3	1
4	Camera	7000	2	13/6/05	1	2
5	UPS	15000	5	21/5/08	1	4
6	Hub	8000	1	31/10/08	2	1
7	Plotter	25000	2	11/1/09	2	2

(Use date functions and aggregate functions)

1. To select the ItemName purchase after 31/10/07
2. Extend the warranty of each item by 6 months
3. Display ItemName , Dateof purchase and number of months between purchase date and present date
4. To list the ItemName in ascending order of the date of purchase where quantity is more than 3.
5. To count the number, average of costperitem of items purchased before 1/1/08
6. To display the minimum warranty , maximum warranty period
7. To Display the day of the date , month , year of purchase in characters
8. To round of the warranty period to month and year format.
9. To display the next Sunday from the date '07-JUN-96'
10. To list the ItemName, which are within the warranty period till present date

Activity 5: (Numeric, character functions)

Use Functions for the following

1. Find the mod of 165,16
2. Find Square Root of 5000
3. Truncate the value 128.3285 to 2 and -1 decimal places
4. Round the value 92.7683 to 2 and -1 decimal places
5. Convert the string 'Department' to uppercase and lowercase
6. Display your address convert the first character of each word to uppercase and rest are in lowercase
7. Combine your first name and last name under the title Full name
8. A) Take a string length maximum of 15 displays your name to the left. The remaining space should be filled with '*'
9. Take a string length maximum of 20 displays your name to the right. The remaining space should be filled with '#'
10. Find the length of the string 'JSS College, Mysore'
11. Display substring 'BASE' from 'DATABASE'
12. Display the position of the first occurrence of character 'o' in Position and Length
13. Replace string Database with Data type
14. Display the ASCII value of ' ' (Space)
15. Display the Character equivalent of 42

Activity 6:**Database: Subject**

Create Following **table** and insert **tuples** with suitable constraints

Table - Physics

Regno	Name	Year	Combination
AJ00325	Ashwin	First	PCM
AJ00225	Swaroop	Second	PMCs
AJ00385	Sarika	Third	PME
AJ00388	Hamsa	First	PMCs

Table – Computer Science

Regno	Name	Year	Combination
AJ00225	Swaroop	Second	PMCs
AJ00296	Tajas	Second	BCA
AJ00112	Geetha	First	BCA
AJ00388	Hamsa	First	PMCs

1. Select all students from physics and Computer Science
2. Select student common in physics and Computer Science
3. Display all student details those are studying in second year
4. Display student those who are studying both physics and computer science in second year
5. Display the students studying only physics
6. Display the students studying only Computer Science
7. select all student having PMCs combination
8. select all student having BCA combination
9. select all student studying in Third year
10. Rename table Computer Science to CS

Activity 7: (views)

Database: Railway Reservation System

Create Following **table** and insert **tuples** with suitable constraints

Table: Train Details

Train_No	Train_Name	Start_Place	Destination
RJD16	Rajdhani Express	Bangalore	Mumbai
UDE04	Udhyan Express	Chennai	Hyderabad
KKE55	Karnataka Express	Bangalore	Chennai
CSE3	Shivaji Express	Coimbatore	Bangalore
JNS8	Janashatabdi	Bangalore	Salem

Table: Availability

Train_No	Class	Start_Place	Destination	No_of_seats
RJD16	Sleeper Class	Bangalore	Mumbai	15
UDE04	First Class	Chennai	Hyderabad	22
KKE55	First Class AC	Bangalore	Chennai	15
CSE3	Second Class	Coimbatore	Bangalore	8
JNS8	Sleeper Class	Bangalore	Salem	18

1. Create view **sleeper** to display train no, start place, destination which have sleeper class and perform the following
 - a. insert new record
 - b. update destination='Manglore' where train no='RJD16'
 - c. delete a record which have train no='KKE55'
2. Create view **details** to display train no, train name, class
3. Create view **total_seats** to display train number, start place, use count function to no of seats , group by start place and perform the following
 - a. insert new record
 - b. update start place='Hubli' where train no='JNS8'
 - c. delete last row of the view
4. Rename view sleeper to class
5. Delete view details

Activity 8 (group by, having clause)

Database: Bank system

Create Following **table** and insert **tuples** with suitable constraints

Table: Account

Account_No	Cust_Name	Brach_ID
AE0012856	Reena	SB002
AE1185698	Akhil	SB001
AE1203996	Daniel	SB004
AE1225889	Roy	SB002
AE8532166	Sowparnika	SB003
AE8552266	Anil	SB003
AE1003996	Saathwik	SB004
AE1100996	Swarna	SB002

Table: Branch

Branch_ID	Branch_Name	Branch_City
SB001	Malleswaram	Bangalore
SB002	MG Road	Bangalroe
SB003	MG Road	Mysore
SB004	Jainagar	Mysore

Table: Depositor

Account_No	Branch_Id	Balance
AE0012856	SB002	12000
AE1203996	SB004	58900
AE8532166	SB003	40000
AE1225889	SB002	150000

Table: Loan

Account_No	Branch_Id	Balance
AE1185698	SB001	102000
AE8552266	SB003	40000
AE1003996	SB004	15000
AE1100996	SB002	100000

1. Display Total Number of accounts present in each branch
2. Display Total Loan amount in each branch
3. Display Total deposited amount in each branch by descending order
4. Display max , min loan amount present in each city.
5. Display average amount deposited in each branch , each city
6. Display maximum of loan amount in each branch where balance is more than 25000
7. Display Total Number of accounts present in each city
8. Display all customer details in ascending order of brachid
9. Update Balance to 26000 where accno=AE1003996
10. Display Customer Names with their branch Name

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

Course Title: C# and .Net Technologies	Course code: CAC08
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Describe Object Oriented Programming concepts like Inheritance and Polymorphism in C# programming language.
- Interpret and Develop Interfaces for real-time applications.
- Build custom collections and generics in C#.

Unit	Description	Hours
1	<p>Introduction to .Net Technologies: Introduction to Web Technologies. HTML Basics, Scripts. Sample Programs. Advantages and Disadvantages of Client-side and Server-side Scripts. Overview of Client-side Technologies and Server-side Technologies.</p> <p>Introduction to C#: Overview of C#, Literals, Variables, Data Types, Operators, Expressions, Control Structures-Methods, Arrays, Strings, Structures, Enumerations.</p>	14
2	<p>OOPS with C#: Classes, Objects, Inheritance, Polymorphism, Interfaces, Operator Overloading Delegates, Events, Errors and Exceptions.</p> <p>Introduction to VB.NET: Introduction VB.NET -IDE – Creating a shortcut to start VB.NET. Maneuvering the Toolbar Auto-hide, Docking and Undocking, Placing and Resizing the Windows, Forms, Properties Window and Solution Explorer. Writing and Event Procedure. Execution Basic Keywords. Data Types. VB.NET statements. Conditional statements: If Else, Select Case, Switch and Choose Loops: Do, For Next, For Each Next, While loop. Arrays.</p>	14
3	<p>Application Development on .NET: C#.NET: Building Windows Applications, VB.NET: Windows Forms. Working with Controls, Timer, Picture-box, Group-box, Combo-box, Horizontal and Vertical Scrollbar, Numeric-up-down, Track-bar, and Progress-bar. Subroutines and Functions in VB.NET. Database applications</p> <p>ADO .NET Connectivity: Introduction to ADO.NET, ADO vs ADO.NET. Architecture: Data reader, Data adapter, Accessing Data with ADO.NET. Programming Web Applications with Web Forms. ASP .NET applications with ADO.NET</p>	14

References:

1. "Programming in C#", E. Balagurusamy, 4th Edition, Tata McGraw-Hill, 2017.
2. "Visual Basic.NET", Shirish Chavan, 3rd Edition, Pearson Education, 2009.
3. "ASP.NET and VB.NET Web Programming", Matt J. Crouch, Edition 2012.
4. "Computing with C# and the .NET Framework", Arthur Gittleman, 2nd Edition, Jones & Bartlett Publishers, 2011

Course Title: C# and .Net Technologies Lab	Course code: CAC08P
Total Contact Hours: 52	Hours/week : 04
Formative Assessment Marks: 25	Course Credits: 02
Exam Marks: 25	Duration of Exam: 03 Hours

Practicals:

1. Develop a C# .NET console application to demonstrate the conditional statements.
2. Develop a C# .NET console application to demonstrate the control statements.
3. Develop an application in C#.NET that demonstrates the windows controls
4. Demonstrate Multithreaded Programming in C#.NET
5. Demonstrate subroutines and functions in C#.NET
6. Develop an application for deploying various built-in functions in VB.NET
7. Develop an MDI application for Employee Pay-roll transactions in VB.NET
8. Construct a console application to demonstrate the OOP Concepts
9. Develop a web application in VB.NET for dynamic Login Processing
10. Develop a Windows application with database connectivity for core-banking transactions

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

Course Title: Computer Networks	Course code: CAC09
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the transmission technique of digital data between two or more computers and a computer network that allows computers to exchange data.
- Apply the basics of data communication and various types of computer networks in real world applications.
- Compare the different layers of protocols.
- Compare the key networking protocols and their hierarchical relationship in the conceptual model like TCP/IP and OSI.

Unit	Description	Hours
1	<p>Introduction: Computer Networks and its applications, Network structure, network architecture, Topologies, LAN, WAN, MAN, The OSI reference model, The TCP/IP reference model.</p> <p>The Physical Layer: Transmission Media – Twisted pair, coaxial cable, optical fiber, radio transmission, microwaves and infrared transmission, Switching – message switching, Multiplexing.</p>	14
2	<p>The Data Link Layer: Data Link Layer design issues, Error detection – Single parity checking, Checksum, polynomial codes – CRC, Error correction- Hamming code, Elementary data link protocols, sliding window protocols</p> <p>The Network Layer: Network layer design issues, Routing algorithms – Flooding, Distance vector routing, Hierarchical routing, Link state routing, Congestion, control algorithms – Leaky bucket, token bucket algorithm, admission control, Hop by Hop choke packets.</p>	14
3	<p>The Transport Layer, Presentation Layer and Application Layer: Elements of Transport service, Elements of Transport, protocols, Internet transport protocols (TCP & UDP), Presentation Layer – Introduction, protocol, Application Layer DNS, Electronic Mailing, and World Wide Web.</p>	14

References:

1. Computer Networks, Andrew S. Tanenbaum, 5th Edition, Pearson Education, 2010.
2. Data Communication & Networking, Behrouza A Forouzan, 3rd Edition, Tata McGraw Hill,2001.
3. Data and Computer Communications, William Stallings, 10th Edition, Pearson Education, 2017.
4. Data Communication and Computer Networks, Brijendra Singh, 3rd Edition, PHI, 2012.
5. Data Communication & Network, Dr. Prasad, Wiley Dreamtech.
6. <http://highereducation.com/sites/0072967757/index.htmls>

Semester: IV

Course Title: Python Programming	Course code: CAC10
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):**At the end of the course, students will be able to:**

- Explain the basic concepts of Python Programming.
- Demonstrate proficiency in the handling of loops and creation of functions.
- Identify the methods to create and manipulate lists, tuples and dictionaries.
- Discover the commonly used operations involving file handling.
- Interpret the concepts of Object-Oriented Programming as used in Python.
- Develop the emerging applications of relevant fields using Python.

Unit	Description	Hours
1	<p>Introduction to Features and Applications of Python; Python Versions; Installation of Python; Python Command Line mode and Python IDEs; Simple Python Program.</p> <p>Python Basics: Identifiers; Keywords; Statements and Expressions; Variables; Operators; Precedence and Association; Data Types; Indentation; Comments; Built-in Functions- Console Input and Console Output, Type Conversions; Python Libraries; Importing Libraries with Examples.</p> <p>Python Control Flow: Types of Control Flow; Control Flow Statements- if, else, elif, while loop, break, continue statements, for loop Statement; range () and exit () functions.</p> <p>Exception Handling: Types of Errors; Exceptions; Exception Handling using try, except and finally.</p> <p>Python Functions: Types of Functions; Function Definition- Syntax, Function Calling, Passing Parameters/arguments, the return statement; Default Parameters; Command line Arguments; Key Word Arguments; Recursive Functions; Scope and Lifetime of Variables in Functions.</p>	14
2	<p>Strings: Creating and Storing Strings; Accessing Sting Characters; the str() function; Operations on Strings- Concatenation, Comparison, Slicing and Joining, Traversing; Format Specifiers; Escape Sequences; Raw and Unicode Strings; Python String Methods.</p> <p>Lists: Creating Lists; Operations on Lists; Built-in Functions on Lists; Implementation of Stacks and Queues using Lists; Nested Lists.</p> <p>Dictionaries: Creating Dictionaries; Operations on Dictionaries; Built-in Functions on Dictionaries; Dictionary Methods; Populating and Traversing Dictionaries.</p> <p>Tuples and Sets: Creating Tuples; Operations on Tuples; Built-in Functions on Tuples; Tuple Methods; Creating Sets; Operations on Sets; Built-inFunctions on Sets; Set Methods</p>	14 15

	File Handling: File Types; Operations on Files– Create, Open, Read, Write, Close Files; File Names and Paths; Format Operator.	
3	<p>Object Oriented Programming: Classes and Objects; Creating Classes and Objects; Constructor Method; Classes with Multiple Objects; Objects as Arguments; Objects as Return Values; Inheritance- Single and Multiple Inheritance, Multilevel and Multipath Inheritance; Encapsulation- Definition, Private Instance Variables; Polymorphism- Definition, Operator Overloading.</p> <p>GU Interface: The tkinter Module; Window and Widgets; Layout Management- pack, grid and place.</p> <p>Python SQLite: The SQLite3 module; SQLite Methods- connect, cursor, execute, close; Connect to Database; Create Table; Operations on Tables- Insert, Select, Update. Delete and Drop Records.</p> <p>Data Analysis: NumPy- Introduction to NumPy, Array Creation using NumPy, Operations on Arrays; Pandas- Introduction to Pandas, Series and DataFrames, Creating DataFrames from Excel Sheet and .csv file, Dictionary and Tuples. Operations on DataFrames.</p> <p>Data Visualisation: Introduction to Data Visualisation; Matplotlib Library; Different Types of Charts using Pyplot- Line chart, Bar chart and Histogram and Pie chart.</p>	14

References:

1. Think Python How to Think Like a Computer Scientist, Allen Downey et al., 2nd Edition, Green Tea Press. Freely available online @ <https://www.greenteapress.com/thinkpython/thinkCSpy.pdf>, 2015.
2. Introduction to Python Programming, Gowrishankar S et al., CRC Press, 2019.
3. Python Data Analytics: Data Analysis and Science Using Pandas, matplotlib, and the Python Programming Language, Fabio Nelli, Apress®, 2015
4. Advance Core Python Programming, MeenuKohli, BPB Publications, 2021.
5. Core PYTHON Applications Programming, Wesley J. Chun, 3rd Edition, Prentice Hall, 2012.
6. Automate the Boring Stuff, Al Sweigart, No Starch Press, Inc, 2015.
7. Data Structures and Program Design Using Python, D Malhotra et al., Mercury Learning and Information LLC, 2021.
8. <http://www.ibiblio.org/g2swap/byteofpython/read/>
9. <https://docs.python.org/3/tutorial/index.html>

Course Title: Python Programming Lab	Course code: CAC10P
Total Contact Hours: 52	Hours/week : 04
Formative Assessment Marks: 25	Course Credits: 02
Exam Marks: 25	Duration of Exam: 03 Hours

Programs for Practical Component:

Part-A

1. Check if a number belongs to the Fibonacci Sequence
2. Solve Quadratic Equations
3. Find the sum of n natural numbers
4. Display Multiplication Tables
5. Check if a given number is a Prime Number or not
6. Implement a sequential search
7. Create a calculator program
8. Explore string functions
9. Implement Selection Sort
10. Implement Stack
11. Read and write into a file

Part-B

1. Demonstrate usage of basic regular expression
2. Demonstrate use of advanced regular expressions for data validation.
3. Demonstrate use of List
4. Demonstrate use of Dictionaries
5. Create SQLite Database and Perform Operations on Tables
6. Create a GUI using Tkinter module
7. Demonstrate Exceptions in Python
8. Drawing Line chart and Bar chart using Matplotlib
9. Drawing Histogram and Pie chart using Matplotlib
10. Create Array using NumPy and Perform Operations on Array
11. Create DataFrame from Excel sheet using Pandas and Perform Operations on DataFrames

Note: A minimum of 10 Programs should be done in each Part.

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

Course Title: Multimedia Animation	Course code: CAC11
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Write a well-designed, interactive Web site with respect to current standards and practices.
- Demonstrate in-depth knowledge of an industry-standard multimedia development tool and its associated scripting language.
- Determine the appropriate use of interactive versus standalone Web applications.

Unit	Description	Hours
1	Web Design: Origins and evolution of HTML, Basic syntax, Basic text markup, Images, Lists, Tables, Forms, Frame, Overview and features of HTML5. CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The and <div> tags; Overview and features of CSS3. JavaScript: Object orientation and JavaScript; General syntactic characteristics; Primitives, operations, and expressions; Screen output and keyboard input. Introduction to Animation: Definition, The Start and End States, Interpolation, Animations in HTML.	14
2	CSS Animations, Creating a Simple Animation, CSS Animation Property, Keyframes, Declaring Multiple Animations, Wrap-up. CSS Transitions, Adding a Transition, Transitions in Detail, The Longhand Properties, Longhand Properties vs. Shorthand Properties, Working with Multiple Transitions. HTML5 – SVG: Viewing SVG Files, Embedding SVG in HTML5, HTML5 – SVG Circle, HTML5 – SVG Rectangle, HTML5 – SVG Line, HTML5 – SVG Ellipse, HTML5 – SVG Polygon, HTML5 – SVG Polyline, HTML5 – SVG Gradients, HTML5 – SVG Star.	14
3	HTML5 – CANVAS: The Rendering Context, Browser Support, HTML5 Canvas Examples, Canvas - Drawing Rectangles, Canvas - Drawing Paths, Canvas - Drawing Lines, Canvas - Drawing Bezier Curves, Canvas - Drawing Quadratic Curves, Canvas - Using Images, Canvas - Create Gradients, HTML5 - Styles and Colors, Canvas - Text and Fonts, Canvas - Pattern and Shadow, Canvas - Save and Restore States, Canvas - Translation, Canvas - Rotation, Canvas - Scaling, Canvas - Transforms, HTML5 Canvas - Composition, Canvas – Animations.	14

References:

1. The Complete Reference HTML and CSS, 5th Edition, Thomas A Powell, 2017
2. Animation in HTML, CSS, and JavaScript, Kirupa Chinnathambi, Createspace Independent Pub, 2013.
3. <https://www.w3.org/Style/CSS/current-work#CSS3>
4. <http://bedford-computing.co.uk/learning/cascading-style-sheets-css/>

Course Title: Multimedia Animation Lab	Course code: CAC11P
Total Contact Hours: 52	Course Credits: 02
Formative Assessment Marks: 25	Duration of SEE/Exam: 03 Hours
Summative Assessment Marks: 25	

List of Lab programs

Part-A

1. Write an HTML program to create and display navigation menus using list tags and anchor tag
2. Write an HTML program to display Multi-media data (text, images, audios, videos, gifs, etc) on a webpage
3. Write an HTML program to create student Registrations form on submitting the form check whether fields are empty or not using JavaScript. If any fields are empty display an error message
4. Write an HTML program to create bio-data(CV or Resume) and to change the following CSS properties
 - Font
 - Text
 - Background
5. Write an HTML program to create div and apply the following CSS properties on created div
 - Margin
 - Padding
 - Border
 - Box shadow
6. Write an HTML program to create a box and using CSS transform and transition properties move the box to the center of the web page on loading web-page
7. Write an HTML program to create a circle and create an animation of bouncing of the circle for 10 sec
8. Write an HTML program to create page loading animations

Part-B

1. Write an HTML program to draw line, polyline and rectangle and fill rectangle with red color using svg tag.
2. Write an HTML program to draw star and multiple circle and with different color using svg tag
Write an HTML program to create logo with linear gradient properties using svg tag.
3. Write an HTML program to draw Square and Rectangle using canvas tag and JavaScript
4. Write an HTML program to draw bezier curve using canvas tag and JavaScript
5. Write an HTML Program to import an external image into a canvas and then to draw on that image
6. Write an HTML program to draw a rectangle box using canvas and to change background color to red, scale of the rectangle to 2 on move-over (hover) properties.
7. Write an html program to draw a circle using canvas and to apply the rotations animations on loading the page

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

Course Title: Operating System Concepts	Course code: CAC12
Total Contact Hours: 42	Course Credits: 03
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the fundamentals of the operating system.
- Comprehend multithreaded programming, process management, process synchronization, memory management and storage management.
- Compare the performance of Scheduling Algorithms
- Identify the features of I/O and File handling methods.

Unit	Description	Hours
1	<p>Introduction to Operating System: Definition, History and Examples of Operating System; Computer System organization; Types of Operating Systems; Functions of Operating System; Systems Calls; Operating System Structure.</p> <p>Process Management: Process Concept- Process Definition, Process State, Process Control Block, Threads; Process scheduling- Multiprogramming, Scheduling Queues, CPU Scheduling, Context Switch; Operations on Processes- Creation and Termination of Processes; Inter process communication (IPC)- Definition and Need for Inter process Communication; IPC Implementation Methods- Shared Memory and Message Passing;</p> <p>CPU Scheduling: Basic concepts; Scheduling Criteria; Scheduling Algorithms; Multiple-processor scheduling; Thread scheduling; Multiprocessor Scheduling; Real-Time CPU Scheduling.</p>	14
2	<p>Multithreaded Programming: Introduction to Threads; Types of Threads; Multithreading- Definition, Advantages; Multithreading Models; Thread Libraries; Threading Issues.</p> <p>Process Synchronization: Introduction; Race Condition; Critical Section Problem and Peterson's Solution; Synchronization Hardware, Semaphores; Classic Problems of Synchronization- Readers and Writers Problem, Dining Philosophers Problem; Monitors.</p> <p>Deadlocks: System Model; Deadlocks Characterization; Methods for Handling Deadlocks; Deadlock Prevention; Deadlock Avoidance; Deadlock Detection; and Recovery from Deadlock.</p>	14

3	<p>Memory Management: Logical and Physical Address Space; Swapping; Contiguous Allocation; Paging; Segmentation; Segmentation with Paging.</p> <p>Virtual Memory: Introduction to Virtual Memory; Demand Paging; Page Replacement; Page Replacement Algorithms; Allocation of frames, Thrashing.</p> <p>File System: File Concepts- Attributes, Operations and Types of Files; File System; File Access methods; Directory Structure; Protection; File System Implementation- File System Structure, Allocation Methods, Free Space Management</p>	14
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References:

1. Operating System Concepts, Silberschatz' et al., 10th Edition, Wiley, 2018.
2. Operating System Concepts - Engineering Handbook, Ghosh PK, 2019.
3. Understanding Operating Systems, McHoes A et al., 7th Edition, Cengage Learning, 2014.
4. Operating Systems - Internals and Design Principles, William Stallings, 9th Edition, Pearson.
5. Operating Systems – A Concept Based Approach, Dhamdhare, 3rd Edition, McGraw Hill Education India.
6. Modern Operating Systems, Andrew S Tanenbaum, 4th Edition, Pearson.

Model Curriculum Structure (B.Sc. Schema)

Program: B.Sc. (Basic and Honors)

Subject: Computer Science

- 1. Computer Science as MAJOR with another Subject as MINOR (Table IIA of Model Curriculum)**
- 2. Computer Science as MAJOR with another Subject also as MAJOR (Table IIIA of Model Curriculum)**
- 3. Computer Science as MINOR with another Subject as MAJOR (As per Table IIA of Model Curriculum)**

Sem	Discipline Specific Core Courses(DSC)	Hour / Week		DS Elective Courses	Hours/ Week
		Theory	Lab		
III	DSC-3: Object Oriented Programming in JAVA	4			
	DSC-3 Lab: JAVA Programming Lab		4		
IV	DSC-4: Database Management Systems	4			
	DSC-4 Lab: DBMS Lab		4		

Model Syllabus for B.Sc. (Basic and Honors), Semesters III and IV

Semester: III

Course Title: Object Oriented Programming in Java	Course code: DSC3
Total Contact Hours: 52	Course Credits: 04
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):

At the end of the course, students will be able to:

- Explain the object-oriented concepts and JAVA.
- Write JAVA programs using OOP concepts like Abstraction, Encapsulation, Inheritance and Polymorphism.
- Implement Classes and multithreading using JAVA.
- Demonstrate the basic principles of creating Java applications with GUI.

Unit	Description	Hours
1	<p>Introduction to Java: Basic OOPs concepts, Basics of Java programming, Data types, Variables, Operators, Control structures including selection, Looping, Java methods, Overloading, Math class, Arrays in java.</p> <p>Objects and Classes: Basics of objects and classes in java, Constructors, Finalizer, Visibility modifiers.</p>	13
2	<p>Methods and objects, Inbuilt classes like String, Character, String Buffer, File, this reference.</p> <p>Inheritance and Polymorphism: Inheritance in java, Super and sub class, Overriding, Object class, Polymorphism, Dynamic binding, Generic programming, Casting objects, Instance of operator, Abstract class, Interface in java, Package in java, UTIL package.</p>	13
3	<p>Event and GUI programming: Event handling in java, Event types, Mouse and key events, GUI Basics, Panels, Frames, Layout Managers: Flow Layout, Border Layout, Grid Layout, GUI components like Buttons, Check Boxes, Radio Buttons, Labels, Text Fields, Text Areas, Combo Boxes, Lists, Scroll Bars, Sliders, Windows, Menus, Dialog Box, Applet and its life cycle, Exception handling mechanism.</p>	13
4	<p>I/O programming: Text and Binary I/O, Binary I/O classes, Object I/O, Random Access Files. Multithreading in java: Thread life cycle and methods, Runnable interface, Thread synchronization, Exception handling with try catch-finally, Collections in java, Network Programming</p>	13

References:

1. Object Oriented Programming with Java: Somashekara M.T., Guru, D.S., Manjunatha K.S, 1st Edition, PHI Learning 2017.
2. Programming with Java, By E Balagurusamy – A Primer, 4th Edition, McGraw Hill Publication.
3. Core Java Volume I – Fundamentals, By Cay S. Horstmann, Prentice Hall.
4. Java 2 - The Complete Reference, Herbert Schildt, 5th Edition, McGraw Hill Publication, 2017.
5. Java - The Complete Reference, Herbert Schildt, 7th Edition, McGraw Hill Publication, 2017.

Course Title: Java Programming Lab	Course code: DSC3 Lab
Total Contact Hours: 52	Hours/week : 04
Formative Assessment Marks: 25	Course Credits: 02
Exam Marks: 25	Duration of Exam: 03 Hours

Course Outcomes (COs):

After completing this course satisfactorily, a student will be able to:

- Implement Object Oriented programming concept using basic syntaxes of control Structures
- Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem
- Demonstrates how to achieve reusability using inheritance
- Demonstrate understanding and use of interfaces, packages, different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.
- Identify and describe common user interface components to design GUI in Java using Applet & AWT along with response to events

Java Programming Lab

PART A: Fundamentals of OOPs in Java

1. Program to assign two integer values to X and Y. Using the 'if' statement the output of the program should display a message whether X is greater than Y.
2. Program to list the factorial of the numbers 1 to 10. To calculate the factorial value, use while loop. (Hint Fact of 4 = 4*3*2*1)
3. Program to add two integers and two float numbers. When no arguments are supplied, give a default value to calculate the sum. Use function overloading.
4. Program to perform mathematical operations. Create a class called AddSub with methods to add and subtract. Create another class called MulDiv that extends from AddSub class to use the member data of the super class. MulDiv should have methods to multiply and divide A main function should access the methods and perform the mathematical operations.
5. Program with class variable that is available for all instances of a class. Use static variable declaration. Observe the changes that occur in the object's member variable values.
6. Program
 - a. To find the area and circumference of the circle by accepting the radius from the user.
 - b. To accept a number and find whether the number is Prime or not
7. Program to create a student class with following attributes; Enrollment No: Name, Mark3of sub1, Mark of sub2, mark of sub3, Total Marks. Total of the three marks must be calculated only when the

student passes in all three subjects. The pass mark for each subject is 50. If a candidate fails in any one of the subjects his total mark must be declared as zero. Using this condition write a constructor for this class. Write separate functions for accepting and displaying student details. In the main method create an array of three student objects and display the details.

8. In a college first year class are having the following attributes Name of the class (BCA, BCom, BSc), Name of the staff No of the students in the class, Array of students in the class

9. Define a class called first year with above attributes and define a suitable constructor. Also write a method called best Student () which process a first-year object and return the student with the highest total mark. In the main method define a first-year object and find the best student of this class

10. Program to define a class called employee with the name and date of appointment. Create ten employee objects as an array and sort them as per their date of appointment. ie, print them as per their seniority.

PART B: Exception Handling & GUI Programming

1. Program to catch Negative Array Size Exception. This exception is caused when the array is initialized to negative values.

2. Program to handle Null Pointer Exception and use the “finally” method to display a message to the user.

3. Program which create and displays a message on the window

4. Program to draw several shapes in the created window

5. Program to create an applet and draw grid lines

6. Program which creates a frame with two buttons father and mother. When we click the father button the name of the father, his age and designation must appear. When we click mother similar details of mother also appear.

7. Create a frame which displays your personal details with respect to a button click

8. Create a simple applet which reveals the personal information of yours.

9. Program to move different shapes according to the arrow key pressed.

10. Demonstrate the various mouse handling events using suitable example.

Note: Student has to execute a minimum of 8 programs in each part to complete the Lab course.

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

Semester: IV

Course Title: Database Management System	Course code: DSC4
Total Contact Hours: 52	Course Credits: 04
Formative Assessment Marks: 40	Duration of SEE/Exam: 02 Hours
Summative Assessment Marks: 60	

Course Outcomes (COs):**At the end of the course, students will be able to:**

- Explain the various database concepts and the need for database systems.
- Identify and define database objects, enforce integrity constraints on a database using DBMS.
- Demonstrate a Data model and Schemas in RDBMS.
- Identify entities and relationships and draw ER diagram for a given real-world problem.
- Convert an ER diagram to a database schema and deduce it to the desired normal form.
- Formulate queries in Relational Algebra, Structured Query Language (SQL) for database manipulation.
- Explain the transaction processing and concurrency control techniques.

Unit	Description	Hours
1	Database Architecture: Introduction to Database system applications. Characteristics and Purpose of database approach. People associated with Database system. Data models. Database schema. Database architecture. Data independence. Database languages, interfaces, and classification of DBMS. E-R Model: Entity-Relationship modeling: E – R Model Concepts: Entity, Entity types, Entity sets, Attributes, Types of attributes, key attribute, and domain of an attribute.	13
2	Relationships between the entities. Relationship types, roles and structural constraints, degree and cardinality ratio of a relationship. Weak entity types, E-R diagram. Relational Data Model: Relational model concepts. Characteristics of relations. Relational model constraints: Domain constraints, key constraints, primary & foreign key constraints, integrity constraints and null values. Relational Algebra: Basic Relational Algebra operations. Set theoretical operations on relations. JOIN operations Aggregate Functions and Grouping. Nested Sub Queries-Views.	13

3	Data Normalization: Anomalies in relational database design. Decomposition. Functional dependencies - Axioms, Minima and Maxima covers. Normalization. First normal form, Second normal form, Third normal form. Boyce-Codd normal form.	13
4	Query Processing Transaction Management: Introduction Transaction Processing. Single user & multiuser systems. Transactions: read & write operations. Need of concurrency control: The lost update problem, Dirty read problem. Types of failures. Transaction states. Desirable properties(ACID properties) of Transactions.	13

References:

1. Fundamentals of Database Systems, Ramez Elamassri, Shankant B. Navathe, 7th Edition, Pearson, 2015
2. An Introduction to Database Systems, Bipin Desai, Galgotia Publications, 2010.
3. Introduction to Database System, C J Date, Pearson, 1999.
4. Database Systems Concepts, Abraham Silberschatz, Henry Korth, S.Sudarshan, 6th Edition, McGraw Hill, 2010.
5. Database Management Systems, Raghu Rama Krishnan and Johannes Gehrke, 3rd Edition, McGraw Hill, 2002.

Course Title: DBMS Lab	Course code: DSC4 Lab
Total Contact Hours: 52	Hours/week : 04
Formative Assessment Marks: 25	Course Credits: 02
Exam Marks: 25	Duration of Exam: 03 Hours

Course Outcomes (COs):

Student would be able to create tables, execute queries

1. Execute a single line query and group functions.
2. Execute DDL Commands.
3. Execute DML Commands
4. Execute DCL and TCL Commands.
5. Implement the Nested Queries.
6. Implement Join operations in SQL
7. Create views for a particular table
8. Implement Locks for a particular table

Activity 1:

Database: Student (DDL, DML Statements)

Table: Student

Name	Reg. No	Class	Major
Smith	17	1	CS
Brown	8	2	CS

Table: Course

Course Name	Course Number	Credit Hours	Department
Introduction to Computer Science	CS1310	4	CS
Data Structure	CS3320	4	CS
Discrete Mathematics	MATH2410	3	MATH
Database Management System	CS3380	3	CS

Table: Section

Section Identifier	Course Number	Year	Instructor
85	MATH2410	98	King
92	CS1310	98	Andreson
102	CS3320	99	Knuth
112	MATH2410	99	Chang
119	CS1310	99	Andreson
135	CS3380	99	Stone

Table: Grade_Report

Reg. No	Section_Identifier	Grade
17	112	B
17	119	C
8	85	A
8	92	A
8	102	B
8	135	A

- Create Tables using create statement
- Insert rows to individual tables using insert statement
- Alter table section add new field section and update the records
- Delete brown's grade report
- Drop the table section

Activity 2: (Select clause, Arithmetic Operators)

Database: Employee

Create Following **tables** and insert **tuples** with suitable constraints

Table: EMPLOYEE

EMPID	FIRSTNAME	LASTNAME	Hire Date	ADDRESS	CITY
1001	George	Smith	11-May-06	83 first street	Paris
1002	Mary	Jones	25-Feb-08	842 Vine Ave	Losantiville
1012	Sam	Tones	12-Sep-05	33 Elm St.	Paris
1015	Peter	Thompson	19-Dec-06	11 Red Road	Paris
1016	Sarath	Sharma	22-Aug-07	440 MG Road	New Delhi
1020	Monika	Gupta	07-Jun-08	9 Bandra	Mumbai

Table: EMPSALARY

EMPID	SALARY	BENEFITS	DESIGNATION
1001	10000	3000	Manager
1002	8000	1200	Salesman
1012	20000	5000	Director
1015	6500	1300	Clerk
1016	6000	1000	Clerk
1020	8000	1200	Salesman

Write queries for the following

1. To display FIRSTNAME, LASTNAME, ADDRESS AND CITY of all employees living in PARIS.
2. To display the content of employee table in descending order of FIRSTNAME
3. Select FIRSTNAME and SALARY of salesman
4. To display the FIRSTNAME, LASTNAME, AND TOTAL SALARY of all employees from the table EMPLOYEE and EMPSALARY. Where TOTAL SALARY is calculated as SALARY+BENEFITS
5. List the Names of employees, who are more than 1 year old in the organization
6. Count number of distinct DESINGATION from EMPSALARY
7. List the employees whose names have exactly 6 characters
8. Add new column PHONE_NO to EMPLOYEE and update the records
9. List employee names, who have joined before 15-Jun-08 and after 16-Jun-07
10. Generate Salary slip with Name, Salary, Benefits, HRA-50%, DA-30%, PF-12%, Calculate gross. Order the result in descending order of the gross.

Activity 3: (Logical, Relational Operators)

Database: Library

Create Following **tables** and insert **tuples** with suitable constraints

Table: Books

Book_Id	Book_name	Author_Name	Publishers	Price	Type	Quantity
C0001	The Klone and I	Lata Kappor	EPP	355	Novel	5
F0001	The Tears	William Hopkins	First Publ	650	Fiction	20
T0001	My First C++	Brain & Brooke	ERP	350	Text	10
T0002	C++ Brainwork's	A.W.Rossaine	TDH	350	Text	15
F0002	Thunderbolts	Ana Roberts	First Publ.	750	Fiction	50

Table: Issued

Book_Id	Quantity_Issued
T0001	4
C0001	5
F0001	2
T0002	5
F0002	8

Write queries for the following

1. To show Book name, Author name and price of books of **First Publ.** publisher
2. Display Book id, Book name and publisher of books having quantity more than 8 and price less than 500
3. Select Book id, book name, author name of books which is published by other than ERP publishers and price between 300 to 700
4. Generate a Bill with Book_id, Book_name, Publisher, Price, Quantity, 4% of VAT "Total"
5. Display book details with book id's C0001, F0001, T0002, F0002 (Hint: use IN operator)
6. Display Book list other than, type Novel and Fiction
7. Display book details with author name starts with letter 'A'
8. Display book details with author name starts with letter 'T' and ends with 'S'
9. Select Book_Id, Book_Name, Author Name , Quantity Issued where Books.Books_Id = Issued.Book_Id
10. List the book_name, Author_name, Price. In ascending order of Book_name and then on descending order of price

Activity 4: (Date Functions)

Database: Lab

Create Following **table** and insert **tuples** with suitable constraints

Table: Equipment_Details

No.	ItemName	Costperitem	Quantity	Dateofpurchase	Warranty	Operational
1	Computer	30000	9	21/5/07	2	7
2	Printer	5000	3	21/5/06	4	2
3	Scanner	8000	1	29/8/08	3	1
4	Camera	7000	2	13/6/05	1	2
5	UPS	15000	5	21/5/08	1	4
6	Hub	8000	1	31/10/08	2	1
7	Plotter	25000	2	11/1/09	2	2

(Use date functions and aggregate functions)

1. To select the ItemName purchase after 31/10/07
2. Extend the warranty of each item by 6 months
3. Display ItemName , Dateof purchase and number of months between purchase date and present date
4. To list the ItemName in ascending order of the date of purchase where quantity is more than 3.
5. To count the number, average of costperitem of items purchased before 1/1/08
6. To display the minimum warranty , maximum warranty period
7. To Display the day of the date , month , year of purchase in characters
8. To round of the warranty period to month and year format.
9. To display the next Sunday from the date '07-JUN-96'
10. To list the ItemName, which are within the warranty period till present date

Activity 5: (Numeric, character functions)

Use Functions for the following

1. Find the mod of 165,16
2. Find Square Root of 5000
3. Truncate the value 128.3285 to 2 and -1 decimal places
4. Round the value 92.7683 to 2 and -1 decimal places
5. Convert the string 'Department' to uppercase and lowercase
6. Display your address convert the first character of each word to uppercase and rest are in lowercase
7. Combine your first name and last name under the title Full name
8. A) Take a string length maximum of 15 displays your name to the left. The remaining space should be filled with '*'
9. Take a string length maximum of 20 displays your name to the right. The remaining space should be filled with '#'
10. Find the length of the string 'JSS College, Mysore'
11. Display substring 'BASE' from 'DATABASE'
12. Display the position of the first occurrence of character 'o' in Position and Length
13. Replace string Database with Data type
14. Display the ASCII value of ' ' (Space)
15. Display the Character equivalent of 42

Activity 6: Database: subject

Create Following **table** and insert **tuples** with suitable constraints

Table - Physics

RegNo	Name	Year	Combination
AJ00325	Ashwin	First	PCM
AJ00225	Swaroop	Second	PMCs
AJ00385	Sarika	Third	PME
AJ00388	Hamsa	First	PMCs

Table – Computer Science

RegNo	Name	Year	Combination
AJ00225	Swaroop	Second	PMCs
AJ00296	Tajas	Second	BCA
AJ00112	Geetha	First	BCA
AJ00388	Hamsa	First	PMCs

1. Select all students from physics and Computer Science
2. Select student common in physics and Computer Science
3. Display all student details those are studying in second year
4. Display student those who are studying both physics and computer science in second year
5. Display the students studying only physics
6. Display the students studying only Computer Science
7. select all student having PMCs combination
8. select all student having BCA combination
9. select all student studying in Third year
10. Rename table Computer Science to CS

Activity 7: (views)

Database: Railway Reservation System

Create Following **table** and insert **tuples** with suitable constraints

Table: Train Details

Train_No	Train_Name	Start_Place	Destination
RJD16	Rajdhani Express	Bangalore	Mumbai
UDE04	Udhyan Express	Chennai	Hyderabad
KKE55	Karnataka Express	Bangalore	Chennai
CSE3	Shivaji Express	Coimbatore	Bangalore
JNS8	Janashatabdi	Bangalore	Salem

Table: Availability

Train_No	Class	Start_Place	Destination	No_of_Seats
RJD16	Sleeper Class	Bangalore	Mumbai	15
UDE04	First Class	Chennai	Hyderabad	22
KKE55	First Class AC	Bangalore	Chennai	15
CSE3	Second Class	Coimbatore	Bangalore	8
JNS8	Sleeper Class	Bangalore	Salem	18

1. Create view **sleeper** to display train no, start place, destination which have sleeper class and perform the following
 - a. insert new record
 - b. update destination='Manglore' where train no='RJD16'
 - c. delete a record which have train no='KKE55'
2. Create view **details** to display train no, train name, class
3. Create view **total_seats** to display train number, start place, use count function to no of seats , group by start place and perform the following
 - a. insert new record
 - b. update start place='Hubli' where train no='JNS8'
 - c. delete last row of the view
4. Rename view sleeper to class
5. Delete view details

Activity 8 (group by, having clause)

Database: Bank system

Create Following **table** and insert **tuples** with suitable constraints

Table: Account

Account_No	Cust_Name	Brach_ID
AE0012856	Reena	SB002
AE1185698	Akhil	SB001
AE1203996	Daniel	SB004
AE1225889	Roy	SB002
AE8532166	Sowparnika	SB003
AE8552266	Anil	SB003
AE1003996	Saathwik	SB004
AE1100996	Swarna	SB002

Table: Branch

Branch_ID	Branch_Name	Branch_City
SB001	Malleswaram	Bangalore
SB002	MG Road	Bangalroe
SB003	MG Road	Mysore
SB004	Jainagar	Mysore

Table: Depositor

Account_No	Branch_Id	Balance
AE0012856	SB002	12000
AE1203996	SB004	58900
AE8532166	SB003	40000
AE1225889	SB002	150000

Table: Loan

Account_No	Branch_Id	Balance
AE1185698	SB001	102000
AE8552266	SB003	40000
AE1003996	SB004	15000
AE1100996	SB002	100000

1. Display Total Number of accounts present in each branch
2. Display Total Loan amount in each branch
3. Display Total deposited amount in each branch by descending order
4. Display max , min loan amount present in each city.
5. Display average amount deposited in each branch , each city
6. Display maximum of loan amount in each branch where balance is more than 25000
7. Display Total Number of accounts present in each city
8. Display all customer details in ascending order of brachid
9. Update Balance to 26000 where accno=AE1003996
10. Display Customer Names with their branch Name

Evaluation Scheme for Lab Examination:

Assessment Criteria	Marks
Writing 2 Programs	10
Execution of 1 Program	10
Viva and Record	05
Total	25

- ❑ **Grammarly:**
https://play.google.com/store/search?q=grammarly&c=apps&hl=en_IN&gl=
- ❑ **Google Map:**
<https://play.google.com/store/search?q=google+maps&c=apps&hl=en&gl=US>
- ❑ **FaceApp:**
https://play.google.com/store/apps/details?id=io.faceapp&hl=en_IN&gl=US
- ❑ **Socratic:**
https://play.google.com/store/apps/details?id=com.google.socratic&hl=en_IN&gl=US
- ❑ **Google Fit: Activity Tracking:**
https://play.google.com/store/apps/details?id=com.google.android.apps.fitness&hl=en_IN&gl=US
- ❑ **SwiftKey Keyboard:**
<https://swiftkey-keyboard.en.uptodown.com/android>
- ❑ **E-commerce App:**
https://play.google.com/store/apps/details?id=com.jpl.jiomart&hl=en_IN&gl=US

Text Books:

1. Wolfgang Ertel, "Introduction to Artificial Intelligence", 2nd Edition, Springer International Publishing 2017.
2. Michael Negnevitsky, "Artificial Intelligence A Guide to Intelligent Systems", 2nd Edition, Pearson Education Limited 2005.

References:

1. https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_tutorial.pdf
2. Kevin Knight, Elaine Rich, Shivashankar B. Nair, "Artificial Intelligence", 3rd Edition, July 2017.

Reference Links:

1. Voice Assistant: <https://alan.app/blog/voiceassistant-2/>
2. Browse with image: <https://www.pocket-lint.com/apps/news/google/141075-what-is-google-lens-and-how-does-it-work-and-which-devices-have-it>
3. OCR: <https://aws.amazon.com/what-is/ocr/>
4. Mobile Payment system: <https://gocardless.com/en-us/guides/posts/how-do-mobile-payment-systems-work/>
5. Grammarly: <https://techjury.net/blog/how-to-use-grammarly/#gref>
6. Travel & Navigation: <https://blog.google/products/maps/google-maps-101-ai-power-new-features-io-2021/>
7. AI in photo editing: <https://digital-photography-school.com/artificial-intelligence-changed-photo-editing/>
8. AI in education: <https://www.makeuseof.com/what-is-google-socratic-how-does-it-work/>
9. AI in health and fitness: <https://cubettech.com/resources/blog/implementing-machine-learning-and-ai-in-health-and-fitness/>
10. E-commerce and online shopping: <https://medium.com/@nyxonedigital/importance2-of-e-commerce-and-online-shopping-and-why-to-sell-online-5a3fd8e6f416>

Open Elective for III & IV Semester

Python Programming Concepts

Course Title: Python Programming Concepts	Course Credits: 3 (3L+0T+0P)
Semester: III/IV	Duration of SEE: 02 Hour
Total Contact Hours: 42	SEE: 60 Marks IA: 40 Marks

Course Outcomes (COs):

- Explain the fundamentals of Computers.
- Explain the basic concepts of Python Programming.
- Demonstrate proficiency in the handling of loops and the creation of functions.
- Identify the methods to create and store strings.

Unit I Fundamentals of Computers

14 Hrs

Introduction to Computers - Computer Definition, Characteristics of Computers, Evolution and History of Computers, Types of Computers, Basic Organization of a Digital Computer; Number Systems – different types, conversion from one number system to another; Computer Codes – BCD, Gray Code, ASCII and Unicode; Boolean Algebra – Boolean Operators with Truth Tables; Types of Software – System Software and Utility Software; Computer Languages - Machine Level, Assembly Level & High Level Languages, Translator Programs – Assembler, Interpreter and Compiler; Planning a Computer Program - Algorithm, Flowchart and Pseudo code with Examples.

Python Basics: - Introduction to Features and Applications of Python; Python Versions; Installation of Python; Python Command Line mode and Python IDEs; Simple Python Program. Identifiers; Keywords; Statements and Expressions; Variables; Operators; Precedence and Association;

Unit II Data types and control structure

14 Hrs

Data Types; Indentation; Comments; Built-in Functions- Console Input and Console Output, Type Conversions; Python Libraries; Importing Libraries with Examples; Illustrative programs.

Python Control Flow: Types of Control Flow; Control Flow Statements- if, else, elif, while loop, break, continue statements, for loop Statement; range() and exit () functions; Illustrative programs.

Unit III Functions and Strings

14 Hrs

Python Functions: Types of Functions; Function Definition- Syntax, Function Calling, Passing Parameters/arguments, the return statement; Default Parameters; Command line Arguments; Key Word Arguments; Illustrative programs.

Strings: Creating and Storing Strings; Accessing String Characters; the str() function; Operations on Strings- Concatenation, Comparison, Slicing and Joining, Traversing; Format Specifiers; Escape Sequences; Raw and Unicode Strings; Python String Methods; Illustrative programs.

References

1. Computer Fundamentals (BPB), P. K. Sinha & Priti Sinha
2. Think Python How to Think Like a Computer Scientist, Allen Downey et al., 2nd Edition, Green Tea Press. Freely available online 2015.
@<https://www.greenteapress.com/thinkpython/thinkCSpy.pdf>
3. Introduction to Python Programming, Gowrishankar S et al., CRC Press, 2019.
4. <http://www.ibiblio.org/g2swap/byteofpython/read/>
5. http://scipy-lectures.org/intro/language/python_language.html
6. <https://docs.python.org/3/tutorial/index.html>

Fundamentals of Multimedia

Course Title: Fundamentals of Multimedia	Course Credits: 3 (3L+0T+0P)
Semester: III/IV	Duration of SEE: 02 Hour
Total Contact Hours: 42	SEE: 60 Marks IA: 40 Marks

Course Outcomes (COs):

- Students will learn about multimedia , which is a field concerned with the computer controlled integration of text, graphics, drawings, still and moving images(video),animation, audio and any other media where every type of information can be represented, stored, transmitted and processed digitally.

Unit I Introduction to Multimedia 14 Hrs

Concepts of Multimedia, Multimedia applications, Advantage of Digital Multimedia, Multimedia system Architecture, Objects of Multimedia. Introduction to Compression and Decompression Techniques and its types. File format standards- RTF, TIFF,RIFF, MIDI, JPEG, AVI, JPEG, TWAIN Architecture.

Unit II Multimedia input and output technologies 14 Hrs

Key Technology Issues, Pen Input, Video and Image Display Systems, Print Output Technologies, Image Scanners, Digital Voice and Audio, Video Images and Animation, Full Motion Video.

Unit III Secured Multimedia and Authentication: 14 Hrs

Secured Multimedia, Digital Rights Management Systems, and Technical Trends - Multimedia encryption - Digital Watermarking – Security Attacks. Multimedia Authentication - Pattern, Speaker and Behavior Recognition – Speaker Recognition - Face Recognition

References

1. Wenjun Zeng, Heather Yu and Ching – Yung Lin, “Multimedia Security technologies for Digital rights Management”, Elsevier Inc 2006.
2. Chun-Shien Lu, “Multimedia Security : Steganography and Digital Watermarking techniques for Protection of Intellectual Property”, Springer Inc 2007.
3. Andleigh PK and Thakrar K, “Multimedia Systems”, Addison Wesley Longman, 1999.
4. Fred Halsall, “Multimedia Communications”, Addison Wesley, 2000.
5. https://www.tutorialspoint.com/multimedia/multimedia_introduction.html
6. https://www.tutorialspoint.com/multimedia/multimedia_images_graphics.html

No.AC6/303/2022-23

Dated: 09-10-2023

Notification

Sub:- Revised Syllabus and Scheme of Examination of Economics programme (III & IV Semester) with effect from the Academic year 2023-24.


- Ref:-** 1. This office circular No: AC2(S)/151/2020-21 dated 08-08-2023.
2. Decision of BOS in Economics and Co-operation meeting held on 15-09-2023.
3. Vice Chancellor approved dated 06-10-2023.

The Board of Studies in Economics and Co-operation which met on 15-09-2023 has resolved to recommended and approved the revised syllabus and scheme of Examinations of Economics programme (III & IV semester) with effect from the academic year 2023-24.

Pending approval of the Faculty of Arts and Academic Council meetings the above said syllabus and scheme of examinations are hereby notified.

The syllabus and Scheme of Examinations contents may be downloaded from the University website i.e., www.uni-mysore.ac.in

DRAFT APPROVED BY THE REGISTRAR


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To;

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS in Economics and Co-operation, Manasagangothri, Mysore.
4. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
5. The Director, PMEB, University of Mysore, Mysore.
6. Director, College Development Council, Manasagangothri, Mysore.
7. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
8. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
9. Office Copy.



Government of Karnataka

**Curriculum Framework for Four-Year Undergraduate
Multidisciplinary Programme (Honours) & Master Programme in
Colleges and Universities of Karnataka State Under NEP 2020.**



**3rd and 4th Semester Model Syllabus
for
BA. and BSc. in
Economics**

**Submitted to
Vice Chairman**

**Karnataka State Higher Education Council
30, Prasanna Kumar Block, Bengaluru City University Campus,
Bengaluru, Karnataka – 560009**

Composition of Subject Expert Committee Members

SN	Name & Organization	Designation
1	Dr. B.P. Veerabhadrappa Vice-Chancellor, Kuvempu University, Shankaraghatta	Chairman
2	Dr. B. K. Tulasimala Vice-Chancellor, KSAW University, Vijayapura	Member
3	Dr. D.V. Gopalappa Professor, University of Mysore, Mysuru	Member
4	Dr. S.T. Bagalkoti Professor, Karnatak University, Dharwad	Member
5	Dr. S. R. Keshava Professor, Bangalore University, Bengaluru.	Member
6	Dr. Viswanatha Professor, Mangalore University, Konaje	Member
7	Dr. Dasharath Naik Professor, Gulbarga University, Kalaburgi.	Member
8	Dr. Jayasheela Professor, Tumkur University, Tumakuru.	Member
9	Dr. D.N. Patil Professor, Rani Channamma University, Belagavi.	Member
10	Dr. Basavaraja S. Benni Professor, Bangalore University, Bangalore.	Member
11	Dr. Rangappa K.B. Professor, Davanagere University, Davanagere.	Member
12	Dr. D. Kumuda Professor, Bengaluru North University, Kolar	Member
13	Dr. N.T. Somashekhar Assoc. Professor, Maharani College, Mysuru	Member
14	Dr. Hanumantharaya Y.S. Assoc. Professor, GFGC, Midigeshi, Madhugiri Tq.	Member
15	Dr. Timmaraddi Assoc. Professor, A. S. Women's College, Ballari.	Member

SN	Name & Organization	Designation
16	Dr. K.B. Dhanajaya Principal, Sahyadri Arts College, Shivamogga.	Member
17	Dr. Joy Narella Assoc. Professor, University College of Arts, Tumakuru.	Member
18	Dr. Prasanna Pandhari GFGC, Rajnagar, Hubballi.	Member
19	Dr. Tejaswini B. Yakkundimath Assoc. Professor, Government First grade Women's college, Belgaum.	Member, Convener
20	Smt. Rajani B. Special Officer, Karnataka State Higher Education Council.	

Special Invitees	
1	Dr. G. L. Parvathamma, Professor, Bangalore University.
2	Dr. Mahesh, Professor, Mysore University.
3	Dr. Premkumar, Professor, Mysore University.
4	Dr. Navitha Thimmayya, Professor, Mysore University.
5	Dr. Baradi, Professor, Karnataka University, Dharwad
6	Dr. R. R. Biradar, Professor, Karnataka University, Dharwad
7	Dr. Basavaraj Nagoor, Professor, Karnataka University, Dharwad
8	Dr. Madari, Professor, KSAW University, Vijayapura
9	Dr. R. V. Gangshetty, Professor, KSAW University, Vijayapura
10	Dr. Yogesh S. N, Professor, Kuvempu University.
11	Dr. Manoj Dolli, Professor, Vijayanagara Sri krishnadevaraya University.
12	Dr. Basappa Kamble, Professor, G.I. Bagewadi College, Nipani.
13	Dr. Shanmukh K. Professor, SBC First grade college for Women, Davangere
14	Dr. B. M. Nasir Khan, Assoc. Professor, Sir MV Govt. Arts & Commerce college, Bhadravati.
15	Dr. Suchitra S., Assoc. Professor, Davangere University.

**Model Curriculum
of
B.A.,
Honours in
Economics
3rd & 4th Semester**

Karnataka State Higher Education Council



Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Third Semester
Course Title	Micro Economics		
Course Code:	DSC-3.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Understand introductory economic concepts.</p> <p>CO2. Recognize basic supply and demand analysis.</p> <p>CO3. Recognize the structure and the role of costs in the economy.</p> <p>CO4. Describe, using graphs, the various market models: perfect competition, monopoly, monopolistic competition, and oligopoly.</p> <p>CO5. Explain how equilibrium is achieved in the various market models.</p> <p>CO6. Identify problem areas in the economy, and possible solutions, using the analytical tools developed in the course.</p>	
Contents	42 Hrs
Unit–1: Basics of Microeconomics	
Chapter:1 Exploring Microeconomics: Nature and scope of economics – Opportunity cost, Scarcity, Production possibility frontier - Market system as a way to organise economic activities and welfare state	3
Chapter:2 Supply and Demand: Determinants of demand and supply; demand and supply schedules and; individual and market demand and supply; shifts in the demand and supply curves.	3
<p>Practicum:</p> <ul style="list-style-type: none"> ➤ Reading and working with graphs ➤ Estimation of elasticity and discussing its applications; solving problems to estimate the equilibrium price and quantity 	

Unit -2: Consumption Decisions	
Chapter 3 The Households: Diminishing marginal utility; Indifference curves – Meaning and properties; Budget constraint; Maximization of satisfaction; Price, Income and Substitution effects;	5
Practicum: Conducting a consumer survey to understand their tastes and preferences	
Unit -3: Production and Costs	
Chapter 4: The Firms: Concept of firm and industry; Production function; Law of variable proportions; iso-quant and iso-cost lines, cost minimizing equilibrium condition; Meaning of Cobb-Douglas production function	5
Chapter 5: Cost of Production: Short run and long run costs; Returns to Scale.(diminishing, constant and increasing)	3
Practicum: <ul style="list-style-type: none"> ➤ Analysing reasons for diminishing marginal returns ➤ Examining the relationship between cost and output/ Deriving cost functions from output functions 	
Unit -4: Pricing	
Chapter 6: The Markets: Meaning of market structure and Types; Pricing under perfect competition; Monopoly pricing and price discrimination; Monopolistic competition –Oligopoly, Interdependence, Collusive and non-collusive oligopoly; Elements of game theory	7
Chapter 7: The Inputs (Factors): Functional and Personal income; Demand for and supply of factors; Marginal productivity theory of distribution; Meaning and determinants of rent, wages, interest and profits.	6
Practicum: <ul style="list-style-type: none"> ➤ Conducting Market Survey to identify the nature and features of markets for different goods/services ➤ Understanding distribution of national income as factor incomes 	
Unit -5: Welfare Economics	
Chapter 8: Welfare Economics: Meaning of welfare; Pigou’s welfare economics; Compensation principle; Impediments to attain maximum social welfare; externalities and marketfailure	6
Practicum: Examining day to day externalities and proposing solutions to them	

Unit -6: Economics in Action	
Chapter 9: Economic Theory and Policy: Basics of monetary and fiscal policies; controls and regulations; incentives and penalties; labour policies (recent policies).	4
Practicum: Analysis of latest budget of the Central Government; Review of terminology used in the latest Monetary Policy of the RBI	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Ahuja, H.L. (2008): <i>Principles of Microeconomics</i> , S. Chand and Co., New Delhi
2	Mankiw, N. Gregory (2020). <i>Principles of Economics</i> (Ninth ed.). Boston, MA.
3	Jhingan, M.L. (2016): <i>Microeconomics</i> , Vrinda Publications, New Delhi
4	Koutsoyianis, A (1979): <i>Modern Microeconomics</i> , London, Macmillan
5	Omkarnath, G. (2012): <i>Economics: A Primer for India</i> , Orient Blackswan, Hyderabad
6	Samuelson, Paul (2004): <i>Economics</i> , McGraw-Hill, New Delhi
7	Krishnaiahgouda H.R. (2020): <i>ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ</i> , Sapna Book House, Bengaluru
8	https://www.core-econ.org/the-economybook/text/0-3-contents.html
9	Somashekhar Ne. Thi., <i>ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ</i> , Sidhlingeshwara Prakashana, Kalburgi.



Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Third Semester
Course Title	Mathematics for Economics		
Course Code:	DSC-3.2.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1.	Perform basic operations in Sets and functions and Matrix algebra.
CO2.	Calculate limits, derivatives of Economic functions and identify the nature of relationship.
CO3.	Calculate maxima and minima of function
Contents	42 Hrs
Unit-1: Preliminaries	12 Hrs
Chapter:1 - Introduction to Mathematical Economics: Nature and scope of mathematical economics- Role of mathematics in economic theory	4
Chapter:2 - Number system and Set theory: Types of Numbers: Natural Number, Real number, integers, Irrational number, Complex number. Concepts of sets- meaning –types- union of sets – interaction of sets.	4
Chapter:3 - Functions: Meaning of function- Types of functions: Linear and Non-linear functions; Quadratic, Polynomial, Logarithmic and Exponential functions.	4
Unit -2: Economic Functions, their Application and Matrices	14 Hrs
Chapter 4 Economic Functions: Demand function, Supply function, Production function, Cost, Revenue and Profit function, Consumption function	4
Chapter-5: Applications of Functions: Graph of economic functions, Market equilibrium; Equilibrium price and quantity, Impact of specific tax and subsidy on market equilibrium	5
Chapter-6: Matrices: Definition and Types of matrices- Matrix operations: Addition, Subtraction and Multiplication, Transpose of a matrix, Determinants of matrix- Cramer’s rule	5

Unit -3: Differential Calculus and Its Applications	16 Hrs
Chapter 7- Limits: Limits of functions, differentiation and rules of differentiation.	4
Chapter 8 Derivatives of Economic functions: Derivation of marginal functions from total function-Marginal production, Marginal cost, Marginal revenue and Marginal profit.	6
Chapter 9 - Applications of Derivatives and Higher order derivatives: Elasticity of demand- Second order derivatives- Maxima and Minima of economic function.	6

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Chiang, A. C. and Wainwright, K., (2005) “ <i>Fundamental Methods of Mathematical Economics</i> ”, McGraw-Hill/Irwin, 4th Edition.
2	Sydsaeter, K and Hammond, P., (2002) <i>Mathematics for Economic Analysis</i> , Pearson Educational Asia, 4th Edition.
3	Allen R.G.D., (2015) <i>Mathematical Analysis for Economists</i> , Macmillan.
4	Bose D., (2003) <i>An Introduction of Mathematical Economics</i> , Himalaya Publishing House, Mumbai.
5	Dowling, E. T., “ <i>Introduction to Mathematical Economics</i> ”, McGraw-Hill, 2001.
6	Hoy, M., Livernois, J. McKenna, C, Rees, R. and Stengos, T., “ <i>Mathematics for Economics</i> ”, MIT Press, 3rd Edition, 2011
7	Sydsaeter, K and Hammond, P., <i>Mathematics for Economic Analysis</i> , Pearson Educational Asia, 4th Edition, 2002.

References

8	Veerachamy R (2005) <i>Quantitative Methods for Economics</i> , New Age International Publishers Private Ltd. New Delhi.
9	Yamane Taro, (2002) <i>Mathematics for Economists -An Implementer Analysis</i> , Phi Learning Publishers.
10	S. N. Yogish, (2005) <i>Mathematical methods for Economists-</i> Mangaldeep publications, Jaipur.



Government of Karnataka

Model Curriculum

Program Name	B. A in Economics	Semester	Third Semester
Course Title	Factor Pricing and Welfare Economics		
Course Code:	DSC-3.2.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Understand the meaning of factor incomes and factor pricing.</p> <p>CO2. Recognize basic supply and demand analysis of factors in perfect and imperfect market situations.</p> <p>CO3. Understand the meaning of social welfare and means to maximize it.</p> <p>CO4. Identify causes inhibiting attainment of maximum social welfare.</p> <p>CO5. Explain the meaning and significance of general equilibrium</p> <p>CO6. Recognize the causes of market failure.</p> <p>CO7. Identify problems related to asymmetric information.</p> <p>CO8. Analyse the need for government intervention in the economic activities.</p>	
Contents	42 Hrs
Unit-1: Factor Pricing	18 Hrs
Chapter:1 Meaning and Significance of factor pricing - Functional (factor) and personal incomes - Demand and Supply of Factors of Production in Perfect and Imperfect Competitive Markets.	3
Chapter:2 Factor pricing in perfectly competitive markets - Marginal productivity theory of factor pricing	2
Chapter:3: Factor pricing in imperfectly competitive markets - Monopsony power: Trade Unions and wage determination - Bilateral monopoly	3
Chapter:4: Theories of wages, rent, interest, and profits (Brief conceptual discussion): Rent: Ricardian Theory, Modern Theory, and Quasi Rent. Wages: Subsistence Theory, Wage-Fund Theory, Residual Claimant Theory, Marginal Productivity Theory and Modern Theory. Interest: Classical Theory - Keynesian Liquidity Preference Theory Profit: Dynamic Theory, Innovation Theory, Risk-bearing Theory and Uncertainty bearing Theory	10

<p>Practicum</p> <ul style="list-style-type: none"> • Collecting information on labour supply to understand the reasons for its backward bending • Describing the graphs used in Chapter2 • Describing the graphs used in Chapter3 • Conducting class seminars about the above theories 	
<p>Unit -2: General Equilibrium</p>	<p>6 Hrs</p>
<p>Chapter 5 Circular flow - Partial and general equilibrium - General equilibrium in production and exchange (Edgeworth box and Pareto optimality in consumption and production) - Walrasian general equilibrium analysis</p>	<p>6</p>
<p>Practicum: Reading and describing the graphs used</p>	
<p>Unit -3: Welfare Economics</p>	<p>18 Hrs</p>
<p>Chapter 6: Individual welfare and social welfare – Pigou’s Welfare Economics - Social welfare function – Kaldor-Hicks Compensation criteria - Arrow’s impossibility theorem - Theory of second best.</p>	<p>7</p>
<p>Chapter 7: Market failure – Meaning of Market Efficiency – Reasons for Market Failure - Externalities, public goods, property rights and Coase Theorem</p>	<p>4</p>
<p>Chapter 8: Asymmetric information - Meaning - adverse selection, moral hazards, agency problems</p>	<p>3</p>
<p>Chapter 9: Government Intervention – Need for Public Policy - Price ceiling, floor - Taxes, subsidies, Tariffs and quotas - production, import and export quotas – Economics Justification for Welfare Schemes</p>	<p>4</p>
<p>Practicum:</p> <ul style="list-style-type: none"> • Conducting surveys to understand the notion of welfare • Collecting information on various sources of market failure • Documenting the causes and consequences of adverse selection and moral hazards in the day-to-day life of students • Preparing a list of government programmes and giving justification for it from the point of view of Economics 	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Ahuja, H.L. (2008): <i>Principles of Microeconomics</i> , S. Chand and Co., New Delhi
2	Mankiw, N. Gregory (2020). <i>Principles of Economics</i> (Ninth ed.). Boston, MA.
3	Jhingan, M.L. (2016): <i>Microeconomics</i> , Vrinda Publications, New Delhi
4	Koutsoyianis, A (1979): <i>Modern Microeconomics</i> , London, Macmillan
5	Omkarnath, G. (2012): <i>Economics: A Primer for India</i> , Orient Blackswan, Hyderabad
6	Salvatore, Dominick (2008) <i>Microeconomics Theory and Applications</i> , Oxford University Press, New York
7	Samuelson, Paul (2004): <i>Economics</i> , McGraw-Hill, New Delhi
8	Krishnaiahgouda H.R. (2020): ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sapna Book House, Bengaluru
9	Somashekhar Ne. Thi., ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sidhlingeshwara Prakashana, Kalburgi.
10	https://www.core-econ.org/the-economy/book/text/0-3-contents.html



Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Third Semester
Course Title	Rural Economics		
Course Code:	OE-3.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. To Understand the basics of rural development,	
CO2. To study the characteristics, problems, and programmes of rural redevelopment	
CO3. To study the trends and patterns of economic activities in rural areas	
CO4. To study the role of infrastructural facilities and governance in rural development	
CO5. To enable the students to know about significance of rural enterprises and agricultural allied activities.	
Contents	42 Hrs
Unit-1:	12 Hrs
Chapter:1 - Introduction to Rural Economy : Meaning and objectives of rural economy- Characteristics of Rural Economy-Indicators of rural development- Concepts of inclusive and sustainable development	5
Chapter:2 - Approaches to Rural Development Gandhian model: Community development approach, Minimum needs approach, Integrated rural development and Inclusive growth approach.	4
Chapter:3 - Poverty and Unemployment in Rural India Meaning and measurement of poverty - Causes of poverty - Farm and non-farm employment Measurement and types employment - Review of poverty alleviation and employment generation programmes in India.	5
Practicum:	
<ul style="list-style-type: none"> • Field visit to nearby village and study the poverty situation • Field visit to village and study the employment pattern 	

- Undertake evaluation study on employment generation programmes and prepare an assignment.

Unit -2:	14 Hrs
Chapter 4- Rural Enterprises Meaning and importance, Classification of MSME - Progress and problems of MSME - Khadi and village industries	5
Chapter-5: Rural Banking and Finance Credit co-operative societies-Regional rural banks - Role of NABARD- Microfinance institutions	4
Chapter-6: Rural Infrastructure Educational and health infrastructure-Housing and sanitation Drinking water supply - Rural transport and communicationrural electrification	5
Practicum:	
<ul style="list-style-type: none"> • Write an assignment on Rural infrastructure • Write a small report on Rural Industry 	

Unit -3:	14 Hrs
Chapter 7- Rural Development Programmes Wage employment programmes- Self-employment and entrepreneurship development programmes - Rural housing programmes - Rural sanitation programmes	4
Chapter 8 - Rural Markets Meaning and types of rural markets- Defects and government measures for removal of defects in rural markets-Co-operative marketing societies - Meaning and importance of regulated markets- digital marketing(e-MAN).	5
Chapter 9 - Rural Governance Legislations powers, functions and sources of revenue of panchayat raj institutionsRole of NGOs in rural development - People's participation in rural development	5
Practicum:	
<ul style="list-style-type: none"> • Group Discussion on Rural Governance • Interview Gram Panchayat members and prepare brief note on their participation in rural development. • Undertake evaluation study on rural development programmes and prepare an assignment. 	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Chambers, R. (1983): <i>Rural Development: Putting the Last First</i> , Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): <i>Poverty in India</i> , GIPE, Pune.
3	Dantwala, M. L. (1973): <i>Poverty in India: Then and Now, 1870-1970</i> , Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): <i>Rural Development in India</i> , Atlantic Publishers and Distributors, New Delhi.
5	Jain, Gopal Lal (1997): <i>Rural Development</i> , Mangal Deep Publications, Jaipur,
6	Singh, Katar (1986): <i>Rural Development: Principles, Policies and Management</i> , Sage Publications, New Delhi, (Second Edition).
7	Karalay, G. N. (2005): <i>Integrated Approach to Rural Development: Policies, Programmes and Strategies</i> , Concept Publishing Company, New Delhi.
8	Maheshwari, S. R. (1985): <i>Rural Development in India</i> , Sage, Publications New Delhi.
9	Satya Sundaram, I. (1997): <i>Rural Development</i> , Himalaya Publishing House, Delhi.
10	Mehta, Shiv R. (1984): <i>Rural Development Policies and Programmes</i> , Sage Publications, New Delhi.
11	Tyagi, B. P. (1998): <i>Agricultural Economics and Rural Development</i> , Jai Prakash Math and Co., Meerut. ಗ್ರಾಮೀಣ ಅಭಿವೃದ್ಧಿ
12	Somashekar Ne. Thi. (2022) ಗ್ರಾಮೀಣ ಅಭಿವೃದ್ಧಿ , Siddalingeshwara publication, Kalburgi.
13	H. R. Krishnaiah Gowda (2022) ಗ್ರಾಮೀಣ ಅಭಿವೃದ್ಧಿ , Mysore book house publication, Mysore.



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Model Curriculum

Program Name	BA in Economics	Semester	Third Semester
Course Title	Economics of Insurance		
Course Code:	OE-3.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to: CO1. Gain knowledge relating to the importance of the insurance in the life of human beings.	
Contents	42 Hrs
Unit-1: Introduction to Economics of Insurance	17
Chapter:1 - Fundamentals of Economics of insurance Definition of insurance - Scope of economic of insurance - Importance of insurance	6
Chapter:2 - The conceptual framework Brief history of insurance - Perils and risks in insurance, Classification of risks hazards - How insurance works - Classes of insurance and assumptions	6
Chapter:3 - Type of Insurance Risk pooling and risk transfer in insurance - Social vs private insurance - Life vs non-life insurance	5
Unit -2: Insurance Planning	12
Chapter 4- Types of Insurance Planning Wealth accumulation plan and lifecycle planning - Tax advantage and tax non-advantage	4
Chapter-5: Retirement Planning Essential of individual retirement planning - Investing pension plan, basic principles of pension plans - Pension plans in India.	
Chapter-6: General Insurance Structure concept of General Insurance - Types of General Insurance, Marine Insurance, Motors Insurance, Agricultural Insurance - Fire Insurance, Personal Accident Insurance.	

Unit -3: personal insurance / Health Insurance	13
Chapter 7- Essential of Life and Health Insurance Fundamentals of Life and Health Insurance, functions of Life and Health Insurance - Health Insurance and Economic Development, Insurance and Farmer Security.	4
Chapter 8 - Insurance Documentation Health Insurance products, Health Insurance underwriting - Health Insurance claims.	4
Chapter 9 - Insurance Legislation The insurance act, 1938- Registration- Accounts and Returns-Investments -Limitation on expense of Management - Regulation of Insurance, Insurance regulation in India, role and need of regulation, history of insurance regulation in India - Insurance Reforms Development Authority (IRDA), performance of IRDA - Indian Insurance in global platform, future potential in Indian Insurance Business.	5

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Mark s	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Preparea report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		
References		
1	Chambers, R. (1983): <i>Rural Development: Putting the Last First</i> , Longman, Harlow.	
2	Dandekar, V.M. and N. Rath (1971): <i>Poverty in India</i> , GIPE, Pune.	
3	Dantwala, M. L. (1973): <i>Poverty in India: Then and Now, 1870-1970</i> , Macmillan, Bombay.	
4	Gupta. K .R. (Ed) (2003): <i>Rural Development in India</i> , Atlantic Publishers and Distributors, NewDelhi.	
5	Jain, Gopal Lal (1997): <i>Rural Development</i> , Mangal Deep Publications, Jaipur,	
6	Singh, Katar (1986): <i>Rural Development: Principles, Polices and Management</i> , Sage Publications,New Delhi, (Second Edition).	
7	Karalay, G. N. (2005): <i>Integrated Approach to Rural Development: Polices, Programmes andStrategies</i> , Concept Publishing Company, New Delhi.	
8	Maheshwari, S. R. (1985): <i>Rural Development in India</i> , Sage, Publications New Delhi.	
9	Satya Sundaram, I. (1997): <i>Rural Development</i> , Himalaya Publishing House, Delhi.	
10	Mehta, Shiv R. (1984): <i>Rural Development Polices and Programmes</i> , Sage Publications, New Delhi.	
11	Tyagi, B. P. (1998): <i>Agricultural Economics and Rural Development</i> , Jai Prakash Math and Co.,Meerut.	



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Model Curriculum

Program Name	BA in Economics	Semester	Third Semester
Course Title	Economics of Human Development		
Course Code:	OE-3.3	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Differentiate between Human Resource Development (HRD), Human Development (HD) and HRM</p> <p>CO2. Understand the concepts of Human security, describe dimensions of human development, and appreciate various practices and policies of human development, HDI and India.</p>	
Contents	42 Hrs
Unit-1: Introduction to Human Development	12 Hrs
Chapter 1: Human growth and human development - Basic needs approach - Quality of life approach - Capability approach	04
Chapter 2: Human resource development (HRD), Human resource management (HRM).	04
Chapter 3: Human Development: meaning and definition, importance, and objectives.	04
Unit -2: Human Security, SDGs and Approaches to Human Development.	12Hrs
Chapter 4: Human Security: Economic security - Food security - Health security - Environmental security - Personal security - Community security - Political security.	04
Chapter 5: Sustainable Development Goals (SDGs): Understanding the SDGs - Linkages between humandevelopment and the SDGs.	04
Chapter 6: Indian Perspectives and Experience with Human Development: Approach to humandevelopment in national plans	04
Unit -3: Dimensions and Measurement of Human Development	18 Hrs

Chapter 7: Dimensions of Human Development: Empowerment - meaning and usage, Cooperation - definition and brief introduction, Equity - concept and usage, Sustainability – meaning and importance, Participation - concept, different forms of participation, Human development & Productivity - factors determining productivity.	06
Chapter 8: Measuring Human Development: Need for indices - limitations of per capita GDP as an indicator. Earlier indices (meaning): - Physical Quality of Life Index (PQLI), - Disability Adjusted Life Years (DALYs), - Social Capability Index. Human Development Index - HDI as compared to per capita GDP - Method of computing HDI - Critique of HDI. Other indices (meaning): Human Poverty Index (HPI)- Gender-related Development Index (GDI) - Gender Empowerment Measure (GEM).	08
Chapter 9: Selected Issues in Human Development: Impact of Globalisation on Human Development - Trade and Human Development. - Technology and Human Development	04

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Preparation report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		
References:		
1. Chelliah, Raja J. and R. Sudarshan (eds.), (1999), <i>Income Poverty and Beyond: Human Development in India</i> , UNDP, Social Science Press, New Delhi		
2. Dev, S. Mahendra, Piush Antony, V. Gayathri, and R.P. Mamgain, (2001), <i>Social and Economic Security in India</i> , Institute for Human Development, New Delhi		
3. Government of India, <i>National Human Development Report (2002)</i> , Planning Commission, New Delhi		
4. Jaya Gopaki, R: (2019) <i>Human Resource Development: Conceptual analysis and Strategies</i> , Sterling Publishing Pvt. Ltd., New Delhi		
5. Naresh Gupta (2019), <i>Human Development in India</i> , Emerald Publishers.		
6. Nadler, Leonard (2004). <i>Corporate Human Resource Development</i> , Van Nostrand Reinhold, ASTD, New York		
7. Padmanabhan Nair(2007) <i>Human Development Index: An Introduction (Economy Series)</i> , ICFAI UNIVERSITY PRESS		

8.	Papalia, D.E. , Olds, S.W. and Feldman, R.D. (2006). <i>Human development</i> .9th Ed. New Delhi: Tata McGraw- Hill.
9.	Rao, T.V and Pareek, Udai (2005) <i>Designing and Managing Human Resource Systems</i> , Oxford IBH Pub. Pvt.Ltd., New Delhi.
10.	Rao, T.V:(2005), <i>Readings in HRD</i> , Oxford IBH Pub. Pvt. Ltd., New Delhi,
11.	Viramani, B.R and Seth, Parmila (2001) <i>Evaluating Management Development</i> , Vision Books, New Delhi.
12.	Rao, T.V. (et.al)(2003) <i>HRD in the New Economic Environment</i> , Tata McGraw-Hill Pub.Pvt, Ltd., New Delhi ,.
13.	Rao, T.V: <i>Human Resource Development</i> , Sage Publications, New Delhi.
14.	Viramani, B.R and Rao, Kala: <i>Economic Restructuring, Technology Transfer and Human Resource Development</i> , Response Books, New Delhi
15.	United Nations Development Programme (2005); ‘ <i>Course Curriculum on Human Development-An Outline</i> ’, New Delhi

Websites:	
1	https://www.undp.org/sustainable-development-goals?c_src=CENTRAL&c_src2=GSR
2	https://hdr.undp.org/en/2020-report
3	https://www.un.org/millenniumgoals/
4	https://www.undp.org/india/publications/national-human-development-report-india
5	https://www.sdgfund.org/mdgs-sdgs

Journals	
1	Indian Journal of Training and Development
2	HRD Newsletter (NHRD Network)
3	American Journal of Training and Development
4	Personnel Today

Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Macro Economics		
Course Code:	DSC-4.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1.	Understand the Theories of National Income Accounting
CO2.	Explain the process of Consumption and Investment Functions
CO3.	Evaluate the Concept of Multiplier and Inflation
Content of Theory	
42 Hrs	
Unit-1: Theory of National Income Determination	
14 Hrs	
Chapter:1 Classical Framework:	7
Typical Features of classical theory of employment; Assumptions- Basis of Classical theory: Say's Law, Pigou's wage price flexibility, Fisher's quantity theory of money, Knut Wicksell's loanable funds theory, Classical dichotomy and neutrality of money and Criticism of classical theory	
Chapter-2: The Keynesian Framework	7
Introductory: connecting growth of national income to development; why incomes of all fall or rise? Are income, output, and employment related?. Some basic concepts: The idea of equilibrium and identity; ex- ante and ex-post concepts. Aggregate demand and its components. Consumption function: Marginal and Average propensity to consume. Investment function; savings and investment relationship. Aggregate Supply: Meaning and graphical explanation; Effective demand. Determination of national income in Keynes' two sector economy with Aggregate Demand and Aggregate Supply Determination of national income in Keynes' two sector economy with investment and savings.	

Unit -2: Aggregate Consumption and Investment	15Hrs
Chapter-3: Theories of Determinants of Consumption: Keynesian psychological law of consumption; determinants and permanent income hypothesis of Milton Friedman	5
Chapter-4: Investment and Savings Types of investment-Determinants of investment: rate of interest and marginal efficiency of capital: meaning and determinants-Savings and its determinants	5
Chapter-5: Concepts of Multiplier and Accelerator Investment Multiplier: Meaning and assumptions. multiplier; leakages;	5
Unit -3: Monetary Economics	13 Hrs
Chapter-6: Money Supply: Concept of Money Supply; recent measures of money supply as suggested by RBI - Determinants of money supply: high powered money and money multiplier. The reserve ratio and deposit multiplier	5
Chapter-7: Money demand: 1. Cash transactions approach (only meaning) and Cambridge approach (Only Marshall's equation) -The liquidity preference approach of Keynes	4
Chapter-8: Inflation and Unemployment: Phillips Curve and Wage cut theory and employment	4

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Preparation report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Ackley, G. (1976), Macroeconomics: Theory and Policy, Macmillan Publishing Company, New York.
2	Ahuja H (2016), Macro Economics- theory and policy, S Chand and Co
3	Dwivedi DN (2016) Macro Economics: Theory and Policy, Tata McGraw-Hill
4	Heijdra, B.J. and F.V. Ploeg (2001), Foundations of Modern macroeconomics, Oxford University Press, Oxford.
5	Keynes, J.M. (1936), The General theory of Employment, Interest and Money, Macmillan, London.
6	Lucas, R. (1981), Studies in Business Cycle Theory, MIT Press, Cambridge, Massachusetts
7	Somashekar Ne. Thi., Principles of Macroeconomics, Scientific International Pvt. Ltd., Publications New Delhi
8	Somashekar Ne. Thi., ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Siddalingeshwara prakashana, Kalburgi.
9	H. R. Krishnaiah Gowda ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Mysore book house prakashana, Mysore.



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Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Statistics for Economics		
Course Code:	DSC-4.2.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Understand the nature of Data and their presentation</p> <p>CO2. Calculate Descriptive statistics like measures of central tendency and dispersion</p> <p>CO3. Apply statistical techniques like correlation and regression in Economic analysis</p>	
Content of Theory	42 Hrs
Unit-1: Preliminaries	12 Hrs
Chapter:1 Introduction to Statistics: Meaning and importance of statistics, functions of statistics, types of statistics: descriptive statistics and inferential statistics-variables; qualitative variable and quantitative variable	4
Chapter-2: Data types, sources and collection of data: qualitative and quantitative data - cross section data, time series data and panel data - primary and secondary sources of data – methods of collecting primary data	4
Chapter-3: Tabulation and presentation of data: classification and tabulation of data - frequency distributions – continuous and discrete frequency distribution. graphical presentation-histogram- frequency polygon - Ogive curves -bar diagram, pie chart	4
Unit -2: Measures of Central Tendency and Dispersion	14 Hrs
Chapter-4: Arithmetic Average: Definition of central tendency, types of central tendency: Arithmetic mean: meaning and properties of arithmetic mean – computation of arithmetic mean	5
Chapter-5: Positional Averages-Median and Mode: Definition and importance of median-calculation of median- definition and importance of mode - calculation of mode.	4

Chapter-6: Dispersion: Meaning of dispersion- measures of dispersion- range- quartile deviation- mean deviation - standard deviation - coefficient of variation and their computation.	5
Unit -3: Correlation, Regression and Time Series Analysis	16 Hrs
Chapter-7: Correlation: Meaning of correlation - types of correlation - methods of measuring correlation- Karl Pearson's correlation coefficients.	5
Chapter-8: Regression: Meaning and importance of regression - regression equation - estimation of regression equation - applications of regression equation in economics.	6
Chapter-9: Time Series Analysis: Definition of time series – components of time series – estimation and forecasting of trend.	5

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Gupta S P. (2012) <i>Statistical Methods</i> , S. Chand and Company, New Delhi.
2	S. C. Gupta, (2018) (New edition) <i>Fundamentals of Statistics</i> , Himalaya publishing house, Mumbai.
3	S. N. Yogish, (2007) <i>Statistical methods for Economists</i> - Mangaldeep publications, Jaipur.
4	Anderson, Sweeney & Williams, (2002) <i>Statistics for Business & Economics</i> , Thomson South-Western, Bangalore.
5	Daniel and Terrel: (1995) <i>Business Statistics for Management and Economics</i> ; oaghton Mifflin Co., Boston, Toronts, 7th Edition, , PP 1 to 972 + 6 Appendices
6	Medhi, J., (1992) <i>Statistical Methods: An Introductory Text</i> , Wiley.
7	Morris H. Degroot and Mark J. Schervish, (2012) " <i>Probability and Statistics</i> ", 4th edition.
8	Teresa Bradley, (2007) <i>Essential Statistics for Economics, Business and Management</i> , John WilleyPublisher.



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Model Curriculum

Program Name	B A in Economics	Semester	Fourth Semester
Course Title	Monetary Economics		
Course Code:	DSC-4.2.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Understand the operation of the overall monetary economy and money	
CO2. What constitutes supply and demand for money as well as theories and approaches.	
CO3. Monetary policy and inflation and its impact on welfare	
Contents	42 Hrs
Unit-1: Introduction to money and monetary economics	15 rs
Chapter:1 Introduction: Theoretical and empirical definition of money -Role and Functions of Money -Paper currency – system of Note issue - weighted monetary aggregates	5
Chapter-2: Money demand and supply: Concepts of supply and demand for money- Microeconomic determinants of the demand for money and macroeconomic moneydemand functions - intermediaries, banks, and money creation - Money supply and price level - Determinants of money supply - High powered money - Money multiplier - The reserve ratio and deposit multiplier	10

Unit -2: Theories and approaches of demand for and supply of money	15 rs
Chapter-3: Theories of demand for money and supply: Tobin’s portfolio selection and Baumol’s transaction demand for money - Friedman’s restatement of quantity theory of moneyEndogenous money supply, Kaldor’s theory	8
Chapter-4: Approaches - demand for money and supply: Laidler’s buffer stock approach - Gurley-Shaw’s approach - Behavioural approach of money supply	7
Unit -3: Inflation and Monetary Policy	12 rs

Chapter-5: Inflation: Inflation – Types – causes – effects and Remedies -Monetarist view on Inflation-Concept of core inflation -measures of inflation (CPI, WPI, Core, Headline, GDP deflator) - Central bank's -measures of monetary control	5
Chapter-6: The welfare effects of inflation and monetary policy: Neutrality and super neutrality of money, welfare costs, and the inflation tax - The Classical model, flexible price economies and monetary policy - Rational expectations, representative agents and real business cycle theory. MIU, CIA, Lucas supply functions and the effects of monetary policy. The new Keynesian approach to monetary policy — nominal rigidities: New Keynesian Phillips curve, IS Curve, Taylor rules, financial accelerator models.	7

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Chandler, L. V. and S. M. Goldfeld, The Economics of Money and Banking, Harper & Row, New York, 1977.
2	M.L.Seth - Money Banking and International Trade ,Tata McGraw Hill Company Ltd., New Delhi, 1999.
3	Gupta, S B, (1995) Monetary Economics Institutions and policy, S.Chand& Co., New Dehi,
4	Mithani.D - Money Banking and International Trade.
5	Patinkin, Money, Interest and Prices, Harper and Row, New York.
6	Khan M. Y., Indian Financial System, Tata McGraw Hill, New Delhi, 1996.
7	Somashekar Ne. Thi., Principles of Macroeconomics, Scientific International Pvt. Ltd., Publications New Delhi
8	Somashekar Ne. Thi., ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Siddalingeshwara prakashana, Kalburgi.
9	H. R. Krishnaiah Gowda ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Mysore book house prakashna, Mysore.
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Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Karnataka Economy		
Course Code:	OE 4.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Understand the nature of economic growth and problems of Karnataka state.	
CO2. Explain the process of structural growth in Karnataka Economy	
CO3. Evaluate the policies and programmes undertaken by the Govt. of Karnataka for bringing about socio-economic development	
Contents	42 Hrs
Unit-1: Karnataka Economy – An overview	12 Hrs
Chapter:1 Characteristics of Karnataka Economy Features of Karnataka economy -Trends and sectoral distribution of state domestic product and per capita incomeMeasures to redress regional imbalances – Dr. Nanjundappa committee report,- Article 371J	5
Chapter-2: Human Resources Human resources: importance, size and health indicators - Human Development Index - Poverty and unemployment– Eradication programmes	4
Chapter-3: Natural Resources Management Natural Resources: Importance and volume of different natural resources - Karnataka environmental policy	3
Practicum: Conduct field visit to Forest/Reservoir/Mining and prepare the report	
Unit -2: Agriculture, Rural development, and Industries in Karnataka	18 Hrs

Chapter-4: Agriculture Problems in Agriculture, Land Reforms, Cropping Pattern, Irrigation: importance, important irrigation projects and watershed development projects. Farmers Suicide– Causes and Solutions	
Chapter-5: Rural Development Public distribution system - Rural development programmes (brief) - Government schemes for rural women	4
Chapter-6: Industries 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	7
Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report	
Unit -3: Infrastructure and Finance in Karnataka	12 Hrs
Chapter-7: Economic Infrastructure Transportation: Road, Rail, Water and Air transport. Information and communication technology facilities	3
Chapter-8: Social Infrastructure Drinking water - Housing and Sanitation - Health and Education - Rural Electrification	4
Chapter-9: State Finance Sources of Revenue: Direct and Indirect Taxes - Impact of GST on Karnataka economy - State Expenditure - State Finance Commission -Current State Budget (Brief)	5
Practicum: Discussion on State budget	

Pedagogy

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

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, NewDelhi.
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	Somashekar Ne. Thi., ಕರ್ನಾಟಕ ಆರ್ಥಿಕತೆ, Siddalingeshwara publications, Kalburgi.
10	Nanjundappa D.M. Some Aspects of Karnataka Economy.
11	Puttaswamiah K. Karnataka Economy, Two Volume ಕರ್ನಾಟಕ ಆರ್ಥಿಕತೆ



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Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Entrepreneurial Economics		
Course Code:	OE 4.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Start own business as Entrepreneur</p> <p>CO2. Enabling the students to find career opportunities in business.</p> <p>CO3. To enable the students to gain knowledge and skills needed to run a business successfully.</p>	
Contents	42 Hrs
Unit-1: Entrepreneur and Entrepreneurship	12 Hrs
<p>Chapter 1: Entrepreneur and Entrepreneurship:</p> <p>Meaning, Definitions, Evolution, types, Characteristics, qualities and functions of entrepreneur- Distinction between entrepreneur and manager, Distinction between entrepreneur and intra-preneur,</p>	05
<p>Chapter 2: Role and importance of Entrepreneurship:</p> <p>Role and importance of Entrepreneurship in economic development, Factors influencing entrepreneurship’- Psychological, social, economic and environmental.</p>	04
<p>Chapter 3: New generations of entrepreneurship:</p> <p>New generations of entrepreneurship: social, health, tourism and women entrepreneurship; barriers to entrepreneurship.</p>	03
Unit -2: Launching Entrepreneurial Ventures	12 Hrs
<p>Chapter 4: Generation of ideas:</p> <p>Generation of ideas: Methods and process - sources of ideas - screening process- Assessing opportunities-Challenges, pitfalls and critical factors of new venture;</p>	04
<p>Chapter 5: Business plan</p> <p>Business plan - New ventures: Steps involved in setting up a business – identifying, selecting a</p>	04

good business opportunity, Market survey and research, techno-economic feasibility assessment.	
Chapter 6: Role of Innovation & Creativity: Innovation- Meaning and importance of innovation; Types of innovation; Sources of innovation; Conditions for effective innovation at Organization level.	04

Unit -3: Business and Entrepreneurial development	18 Hrs
Chapter 7: Creativity: Creativity: Concept and process of creativity; role and importance of creativity and mental blocks to creativity; branding, trademarks, patents, copyrights, and registered design protection- Methods of protecting innovation and creativity.	05
Chapter 8: Entrepreneur Assistance: Entrepreneur Assistance: Assistance to an entrepreneur-Industrial Park (Meaning, features, & examples)-Special Economic Zone (Meaning, features & examples)-Financial assistance by different agencies-License, Environmental Clearance, e-tender process, Excise exemptions and concession, Exemption from income tax -Quality Standards with special reference to ISO.	06
Chapter 9: Business and Entrepreneurial development Business and Entrepreneurial development: Determining and acquiring required resources (Financial, Physical and Human): Search for entrepreneurial capital- Debt vs. Equity; Venture Capital Market; Angel financing and alternative sources of finance for entrepreneurs. Entrepreneurship development programme (EDP) in India– Objectives, phases, and inputs of EDP; - Government initiatives for entrepreneurship – Make in India, Start-up India, MUDRA etc.	07

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

06

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Donald F Kuratko (2014) "Entrepreneurship – Theory, Process and Practice", 9 th Edition, CengageLearning.
2	Khanka. S.S., (2013) "Entrepreneurial Development" S.Chand & Co. Ltd., Ram Nagar, New Delhi,.
3	Kuratko and Rao, Entrepreneurship: A South Asian Perspective; Ferrell, Fraedrich, Farrell, Business Ethics, Cengage Learning
4	Entrepreneurship, R. Saibaba, Kalyani Publishers, New Delhi.
5	Entrepreneurship Development and Business Ethics, Sanjeet Sharma – V.K. Global Pvt. Ltd., New Delhi
6	SS Khanka, Entrepreneurial Development, S. Chand & Co, Delhi.
References	
7	Desai, Vasant. Dynamics of Entrepreneurial Development and Management. Mumbai, Himalaya Publishing House
8	Plsek, Paul E. Creativity, Innovation and Quality (Eastern Economic Edition), New Delhi:Prentice-Hall of India. ISBN-81-203-1690-8.
9	Singh, Nagendra P. Emerging Trends in Entrepreneurship Development. New Delhi: ASEED.
10	Entrepreneurship Development and Business Ethics - M K Nabi, K C Rout, Vrinda Publications (P) Ltd
11	Robert Hisrich and Michael Peters, Entrepreneurship, Tata Mc Graw– Hill Vasant Desai, Entrepreneurship
12	Marc J Dollinger, Entrepreneurship – Strategies and Resources, Pearson Education
13	Venkateshwara Rao and Udai Pareek,(Eds)Developing Entrepreneurship-A Handbook
14	Ravi J. Mathai, Rural Entrepreneurship A Framework in Development Entrepreneurship –Ahandbook



Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Economics and Law		
Course Code:	OE 4.3	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Comprehend the basic economic issues affecting the economy along with the related legal provisions</p> <p>CO2. Acquire knowledge on the basic provisions of law relating to consumer activities, business organizations, environment</p> <p>CO3. To appreciate the understanding the law framework in order to frame the economics model closer to reality.</p> <p>CO4. To enable the students to understand the consequences of legal rules, primarily as an exercise in applied microeconomics, macroeconomics, industrial and international economics.</p>	
Contents	42 Hrs
Unit–1: Economic analysis of law	14 Hrs
<p>Chapter 1: Introduction to legal reasoning</p> <p>Efficiency- Markets and efficiency - Market failure - Coase theorem and related ideas.</p>	5
<p>Chapter 2: welfare economics</p> <p>Compensation principles - Social welfare function - Maximization problem</p>	4
<p>Chapter 3: Economic Reasoning</p> <p>Nature of economic reasoning - Economic approach to law – History – Criticism</p>	5
<p>Practicum:</p> <p>1. Group Discussions on Economic reasoning.</p> <p>2. Assignment on Coase theorem and related issues</p>	

Unit -2: An Introduction to Law and Legal Institutions	12 Hrs
Chapter 4: Law Definition -Territorial Nature of Law - Kinds of Law - General Law and Special Law - Kinds of Special Law	4
Chapter 5: Civil law and the and the Common Law Traditions The institutions of the federal and State Court systems - The nature of legal dispute - How legal rules evolve	4
Practicum: 1. Group Discussions on Civil law and the and the Common Law Traditions 2. Assignment on the different kinds of Law	
Unit -3: Economic Laws	16 Hrs
Chapter 6: Law Relating to Consumer Activities Bargaining theory - Economic theory of contract - Defining tort law - Economics of tort liability - Definition of Consumer - Consumer protection; The Consumer Protection Act, 2019 - Consumer courts.	5
Chapter 7: Law of Business Organizations Structure of firm — Kinds, Corporations -Capital, Shares, Debentures, Insiders' and trading- RBI, IRDA, MRTP, Role of SEBI,	
Chapter 8: Macroeconomics and Law Inequality; Contract theory of Distributive justice - Economic and social costs of poverty - Wealth distribution by Liability Rules – Taxation and efficiency - National and global environmental problems and international environmental agreements - their legal and economic implications	
Practicum 1. Hold the moot court in the classroom and let there be discussion consisting of at least two or more different views on National and Global environment problems and acts. 2. Discuss the case studies on Economic and social costs of poverty and consumer court judgements protecting the consumers.	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Bouckaert, B. and G. De Geest (Ed.) (1999), Encyclopaedia of Law and Economics, (Volume I to V), Edward Elgar Publishing Ltd., U.K.
2	Cooter, R.D. and T.S. Ulen, (2000), Law and Economics, (3rd Edition), Addison Wesley, New York.
3	Dan-Schmidt, K.G. and T.S. Ulen (Ed.) (2000), Law and Economic Anthology, Addison Wesley, New York.
4	Newman, P. (Ed.) (1998), The New Palgrave Dictionary of Economics and Law, Stockton Press, New York.
5	Oliver, J.M. (1979), Law and Economics, George Allen and Unwin, London.
6	Posner, R.A. (1998), Economic Analysis of Law, (5th Edition), Little Brown, Boston.
7	Posner, R.A. and F. Parisi (Eds.) (1997), Law and Economics, Edward Elgar Publishing Ltd., U.K.
8	Massey, I.P. (1995), Administrative Law, Eastern Book Company, Lucknow.
9	Indian Law Institute, Annual Survey of Indian Law, Indian Law Institute, New Delhi.



Government of Karnataka

Model Curriculum

Program Name	BA in Economics	Semester	Fourth Semester
Course Title	Economics of GST		
Course Code:	OE 4.4	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Acquire knowledge on indirect taxes with special reference to GST	
CO2. Acquire the theoretical and application knowledge of GST and its Evolution in India	
CO3. To enable the students to understand the GST Law, ITC, Valuation of supply and returns	
CO4. Simple calculation of GST and Input Tax Credit, Valuation of Supply (Numerical on valuation and calculation of tax)	
Contents	42 Hrs
Unit-1: Introduction to Economics of GST	14 Hrs
Chapter 1: Indirect taxes before GST	5
Indirect Taxes-Meaning, Types with examples -Constitutional framework of Indirect Taxes before GST (Taxation Powers of Union & State Government) -Concept of VAT: Meaning, Variants and Methods;	
Chapter 2: Reforms in Indirect Taxes	4
Major Defects in the structure of Indirect Taxes prior to GST; Need for Tax reforms - Kelkar committee on Tax Reforms	
Chapter 3: Introduction to GST	5
Rationale for GST - Constitution [101st Amendment] Act, 2016 - GST- Meaning, Overview of GST - Taxes subsumed under GST - Territorial Jurisdiction of GST- Multiple rates of GST - Recent reforms in GST.	
Practicum:	
1. Group Discussions on Indirect Taxes defects prior to GST.	
2. Assignment on Types of Indirect Taxes prior to GST and After introduction of GST.	

Unit – 2 Fundamentals of GST	12 Hrs
Chapter 4: GST Structure in India, GST: Advantages and Disadvantages - One Nation-One Tax - Structure of GST -Features of Single and Dual GST Model	4
Chapter 5: Dual GST Mode and GST Council Dual GST Mode in India: (SGST, CGST, UTGST & IGST) - Goods and Services Tax Network [GSTN] - GST Council; Creation, Members, Decisions, Compensation to states - GST Network – Registration.	4
Practicum: 1. Group Discussions on advantages and disadvantages of GST 2. Hold the moot of GST Council in the class room and decide the different slabs of GST	4
Unit -3: Taxes and Duties	16 Hrs
Chapter 6: Transactions and taxes covered and not covered Transactions and taxes covered under GST - Taxes and duties outside the purview of GST - Tax structure Computation - Administration of Tax on items containing alcohol, petroleum products, tobacco products - Taxation on services.	4
Chapter 7: Levy and Collection of Tax Taxable event- “Supply” of Goods and Services - Place of Supply: Within state, Interstate Levy and Collection - Import and Export; Time of supply - Valuation for GST- Valuation rules - Taxability of reimbursement of expenses - Exemption from GST: Small supplies and Composition Scheme Classification of Goods and Services: Composite and Mixed Supplies.	6
Chapter 8: Input Tax Credit Eligible and Ineligible Input Tax Credit - Apportionments of Credit and Blocked Credits - Tax Credit in respect of Capital Goods - Recovery of Excess Tax Credit - Availability of Tax Credit in special circumstances - Transfer of Input Credit (Input Service Distribution) -Payment of Taxes; Refund; Doctrine of unjust enrichment.	6
Practicum 1. Simple illustrations on calculation of GST and Input Tax Credit, 2. Valuation of Supply (Numerical on valuation and calculation of tax) 3. Simple calculation Adjustment of Input tax credit against output CGST, SGST, IGST.	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	The Central Goods and Services Tax, 2017
2	The Integrated Goods and Services Tax, 2017
3	The Union Territory Goods and Services Tax, 2017
4	The Goods and Services Tax (Compensation to States), 2017
5	The Constitution (One hundred and First Amendment) Act, 2016
6	Gupta, S.S. , <i>GST- How to meet your obligations (April 2017)</i> , Taxmann Publications
7	Datey, V.S. (2019) . <i>Indirect Taxation</i> . New Delhi <i>Vastu and Sevakar Vidhan</i> by Government of India
8	Mehrotra, H.C. & Goyal, S.P.(2019), <i>Indirect Taxes</i> , Agra: Bhawan Publications.

**Model Curriculum
of
B. Sc
Honours in
Economics
3rd & 4th Semesters**

Karnataka State Higher Education Council



Government of Karnataka

Model Curriculum

Program Name	B. Sc in Economics	Semester	Third Semester
Course Title	Factor Pricing and Welfare Economics		
Course Code:	DSC-3.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Understand the meaning of factor incomes and factor pricing.</p> <p>CO2. Recognize basic supply and demand analysis of factors in perfect and imperfect market situations.</p> <p>CO3. Understand the meaning of social welfare and means to maximize it.</p> <p>CO4. Identify causes inhibiting attainment of maximum social welfare.</p> <p>CO5. Explain the meaning and significance of general equilibrium</p> <p>CO6. Recognize the causes of market failure.</p> <p>CO7. Identify problems related to asymmetric information.</p> <p>CO8. Analyse the need for government intervention in the economic activities.</p>	
Contents	42 Hrs
Unit-1: Factor Pricing	18 Hrs
Chapter:1 Meaning and Significance of factor pricing - Functional (factor) and personal incomes - Demand and Supply of Factors of Production in Perfect and Imperfect Competitive Markets.	3
Chapter:2 Factor pricing in perfectly competitive markets - Marginal productivity theory of factor pricing	2
Chapter:3: Factor pricing in imperfectly competitive markets - Monopsony power: Trade Unions and wage determination - Bilateral monopoly	3
<p>Chapter:4: Theories of wages, rent, interest, and profits (Brief conceptual discussion):</p> <p>Rent: Ricardian Theory, Modern Theory, and Quasi Rent. Wages: Subsistence Theory, Wage-Fund Theory, Residual Claimant Theory, Marginal Productivity Theory and Modern Theory.</p> <p>Interest: Classical Theory - Keynesian Liquidity Preference Theory Profit: Dynamic Theory, Innovation Theory, Risk-bearing Theory and Uncertainty bearing Theory</p>	10

<p>Practicum</p> <ul style="list-style-type: none"> • Collecting information on labour supply to understand the reasons for its backward bending • Describing the graphs used in Chapter2 • Describing the graphs used in Chapter3 • Conducting class seminars about the above theories 	
<p>Unit -2: General Equilibrium</p>	<p>6 Hrs</p>
<p>Chapter 5 Circular flow - Partial and general equilibrium - General equilibrium in production and exchange (Edgeworth box and Pareto optimality in consumption and production) - Walrasian general equilibrium analysis</p>	<p>6</p>
<p>Practicum: Reading and describing the graphs used</p>	
<p>Unit -3: Welfare Economics</p>	<p>18 Hrs</p>
<p>Chapter 6: Individual welfare and social welfare – Pigou’s Welfare Economics - Social welfare function – Kaldor-Hicks Compensation criteria - Arrow’s impossibility theorem - Theory of second best.</p>	<p>7</p>
<p>Chapter 7: Market failure – Meaning of Market Efficiency – Reasons for Market Failure - Externalities, public goods, property rights and Coase Theorem</p>	<p>4</p>
<p>Chapter 8: Asymmetric information - Meaning - adverse selection, moral hazards, agency problems</p>	<p>3</p>
<p>Chapter 9: Government Intervention – Need for Public Policy - Price ceiling, floor - Taxes, subsidies, Tariffs and quotas - production, import and export quotas – Economics Justification for Welfare Schemes</p>	<p>4</p>
<p>Practicum:</p> <ul style="list-style-type: none"> • Conducting surveys to understand the notion of welfare • Collecting information on various sources of market failure • Documenting the causes and consequences of adverse selection and moral hazards in the day-to-day life of students • Preparing a list of government programmes and giving justification for it from the point of view of Economics 	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Ahuja, H.L. (2008): <i>Principles of Microeconomics</i> , S. Chand and Co., New Delhi
2	Mankiw, N. Gregory (2020). <i>Principles of Economics</i> (Ninth ed.). Boston, MA.
3	Jhingan, M.L. (2016): <i>Microeconomics</i> , Vrinda Publications, New Delhi
4	Koutsoyianis, A (1979): <i>Modern Microeconomics</i> , London, Macmillan
5	Omkarnath, G. (2012): <i>Economics: A Primer for India</i> , Orient Blackswan, Hyderabad
6	Salvatore, Dominick (2008) <i>Microeconomics Theory and Applications</i> , Oxford University Press, New York
7	Samuelson, Paul (2004): <i>Economics</i> , McGraw-Hill, New Delhi
8	Krishnaiahgouda H.R. (2020): ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sapna Book House, Bengaluru
9	Somashekhar Ne. Thi., ಸೂಕ್ಷ್ಮ ಅರ್ಥಶಾಸ್ತ್ರ, Sidhlingeshwara Prakashana, Kalburgi.
10	https://www.core-econ.org/the-economy/book/text/0-3-contents.html



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Third Semester
Course Title	Basic Econometrics		
Course Code:	DSC-3.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. The students will be able to carry out ordinary least square regressions</p> <p>CO2. as well as multiple regressions, which are at the very foundation of quantitative economic analysis.</p> <p>CO3. The course is designed to make students familiar with more complex cases where the standard assumptions of the classic linear regression may not hold.</p>	
Contents	42 Hrs
Unit-1: Nature and Scope of Econometrics	12 Hrs
Chapter:1 Introduction to Econometrics: Meaning of Econometrics, Nature and scope of Econometrics- relationship with economics, mathematics and statistics - Methodology of econometrics-Types of Econometrics	4
Chapter:2 Understanding Regression Model: The Historical Origin of the Term Regression- Modern Interpretation of Regression-Scatter Diagram-Regression Line- Statistical versus Deterministic Relationships-Regression versus Causation-Regression versus Correlation-Terminologies	4
Chapter:3 Two Variable Regression Analysis: Basic Idea-Conditional Mean-Conditional Probability-Population Regression Function (PRF)-Meaning of Linearity-Stochastic Specification of PRF-Significance of Error Term-Sample Regression Function	4
Unit -2: Regression Model: The Problem of Estimation	14 Hrs
Chapter 4 Method of Estimation: The Method of Ordinary Least Square-Point Estimator- Interval Estimator-Classical Linear Regression Model Assumptions-Properties of Least Square Estimators: The Gauss-Markov Theorem	4

Chapter-5: Estimation and Validation: Coefficient of Determination-Explained Sum of Squares-Residual Sum of Squares-Total Sum of Squares; Hypotheses Testing: precision of estimators- standard error-t-test- testing significance Individual Coefficients-Level of Significance	5
Chapter-6: Multiple Regression Analysis: Three Variable Regression Model-Estimation- Interpretation-Validation: Individual Coefficients (t-test)- Overall Significance (F-test) Model Fit: R-Squared and Adjusted R-Squared	5
Unit -3: Relaxing CLRM Assumptions and Advanced Regression Models	16 Hrs
Chapter 7-The Problems in Regression Model: Multicollinearity: Nature-Identification- Consequences-Detection- Remedial Measures; Heteroscedasticity: Nature-Identification- Consequences-Detection- Remedial Measures; Autocorrelation: Nature-Identification- Consequences-Detection- Remedial Measures	6
Chapter 8 Dummy Variable Regression Models: Nature of Dummy Variables – Specification of Dummy – Dummy Variable Trap – ANOVA – ANCOVA Models	6
Chapter 9 : Simultaneous Regression Model: Nature-simultaneous equation bias-Inconsistency of OLS estimators –Structural and Reduced form equations – Identification Problem- Under – Exact – Over identification –Rules of identification- Order and Rank condition- Introduction to methods of estimation-ILS-2SLS-IV-LIMLE-SUR-3SLS- FIMLE	4

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Studenmund A. H., (2017) “Using Econometrics: A practical Guide”, Pearson Education, 7th Ed.
2	Stock, J. H. and Watson, M. W.,(2015) “Introduction to Econometrics”, Pearson, 3rd Ed.
3	Brooks, C., (2019) “Introductory Econometrics for Finance”, Cambridge University press, 4thEd,
4	Baum, C. E., (2006) “An Introduction to Modern Econometrics Using Stata”, Stata Press
5	Gujarati, D. N., (2014) “Econometrics by Example”, Red Globe Press, 2nd Ed.
6	Koutsoyiannis, A, (2018), Theory of Econometrics
7	Wooldridge, J. M., (2013) “Introductory Econometrics: An Introductory Approach”, Southwestern,Cengage Learning, 5th Ed.
8	Gujarati, D. N., Porter D.C., Gunasekar S., (2012) “Basic Econometrics”, Mc Graw Hill, 5th Ed.
9	MarnoVerbeek, (2017),“A Guide to Modern Econometrics”, John Wiley & Sons, Ltd, 5 th Edition.
10	Enders, W., (2018) “Applied Econometric Time Series”, Wiley 4th Edition.
11	Baltagi, B.H. (2013) “Econometric analysis of panel data”, John Wiley and Sons, 5th Edition.
12	Pindyck, R.S. and Rubin Feld, D.L., “Econometric Models and Economic Forecasts” 4th Ed
13	Jeffrey M. Wooldridge Econometric Analysis of Cross Section and Panel Data, MIT Press



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Third Semester
Course Title	Rural Economics		
Course Code:	OE-3.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. To Understand the basics of rural development,</p> <p>CO2. To study the characteristics, problems, and programmes of rural redevelopment</p> <p>CO3. To study the trends and patterns of economic activities in rural areas</p> <p>CO4. To study the role of infrastructural facilities and governance in rural development</p> <p>CO5. To enable the students to know about significance of rural enterprises and agricultural allied activities.</p>	
Contents	42 Hrs
Unit-1:	12 Hrs
<p>Chapter:1 - Introduction to Rural Economy:Meaning and objectives of rural economy- Characteristics of Rural Economy-Indicators of rural development- Concepts of inclusive and sustainable development</p>	5
<p>Chapter:2 - Approaches to Rural Development</p> <p>Gandhian model: Community development approach,Minimum needs approach, Integrated rural development and Inclusive growth approach.</p>	4
<p>Chapter:3 - Poverty and Unemployment in Rural India</p> <p>Meaning and measurement of poverty - Causes of poverty - Farm and non-farm employment Measurement and types employment - Review of poverty alleviation and employment generation programmes in India.</p>	5
<p>Practicum:</p> <p>Field visit to nearby village and study the poverty situation</p> <p>Field visit to village and study the employment pattern</p> <p>Undertake evaluation study on employment generation programmes and prepare an assignment.</p>	

Unit -2:	14 Hrs
Chapter 4- Rural Enterprises Meaning and importance, Classification of MSME - Progress and problems of MSME - Khadi and village industries	5
Chapter-5: Rural Banking and Finance Credit co-operative societies-Regional rural banks - Role of NABARD- Microfinance institutions	4
Chapter-6: Rural Infrastructure Educational and health infrastructure-Housing and sanitation Drinking water supply - Rural transport and communicationrural electrification	5
Practicum:	
<ul style="list-style-type: none"> • Write an assignment on Rural infrastructure • Write a small report on Rural Industry 	

Unit -3:	14 Hrs
Chapter 7- Rural Development Programmes Wage employment programmes- Self-employment and entrepreneurship development programmes - Rural housing programmes - Rural sanitation programmes	4
Chapter 8 - Rural Markets Meaning and types of rural markets- Defects and government measures for removal of defects in rural markets-Co-operative marketing societies - Meaning and importance of regulated markets- digital marketing(e-MAN).	5
Chapter 9 - Rural Governance Legislations powers, functions and sources of revenue of panchayat raj institutions-Role of NGOs in rural development - People's participation in rural development	5
Practicum:	
<ul style="list-style-type: none"> • Group Discussion on Rural Governance • Interview Gram Panchayat members and prepare brief note on their participation in rural development. • Undertake evaluation study on rural development programmes and prepare an assignment. 	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Chambers, R. (1983): Rural Development: Putting the Last First, Longman, Harlow.
2	Dandekar, V.M. and N. Rath (1971): Poverty in India, GIPE, Pune.
3	Dantwala, M. L. (1973): Poverty in India: Then and Now, 1870-1970, Macmillan, Bombay.
4	Gupta. K .R. (Ed) (2003): Rural Development in India, Atlantic Publishers and Distributors, New Delhi.
5	Jain, Gopal Lal (1997): Rural Development, Mangal Deep Publications, Jaipur,
6	Singh, Katar (1986): Rural Development: Principles, Policies and Management, Sage Publications, New Delhi, (Second Edition).
7	Karalay, G. N. (2005): Integrated Approach to Rural Development: Policies, Programmes and Strategies, Concept Publishing Company, New Delhi.
8	Maheshwari, S. R. (1985): Rural Development in India, Sage, Publications New Delhi.
9	Satya Sundaram, I. (1997): Rural Development, Himalaya Publishing House, Delhi.
10	Mehta, Shiv R. (1984): Rural Development Policies and Programmes, Sage Publications, New Delhi.
11	Tyagi, B. P. (1998): Agricultural Economics and Rural Development, Jai Prakash Math and Co., Meerut.
12	Somashekar Ne. Thi. (2022) ಗ್ರಾಮ ಮಹಿಳಾ ಅಭಿವೃದ್ಧಿ , Siddalingeshwara publication, Kalburgi.
13	H. R. Krishnaiah Gowda (2022) ಗ್ರಾಮ ಮಹಿಳಾ ಅಭಿವೃದ್ಧಿ , Mysore book house publication, Mysore.



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Third Semester
Course Title	Economics of Insurance		
Course Code:	OE-3.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to: CO1. Gain knowledge relating to the importance of the insurance in the life of human beings.	
Contents	42 Hrs
Unit-1: Introduction to Economics of Insurance	17
Chapter:1 - Fundamentals of Economics of insurance Definition of insurance - Scope of economic of insurance - Importance of insurance	6
Chapter:2 - The conceptual framework Brief history of insurance - Perils and risks in insurance, Classification of risks hazards - How insurance works - Classes of insurance and assumptions	6
Chapter:3 - Type of Insurance Risk pooling and risk transfer in insurance - Social vs private insurance - Life vs non-life insurance	5
Unit -2: Insurance Planning	12
Chapter 4- Types of Insurance Planning Wealth accumulation plan and lifecycle planning - Tax advantage and tax non-advantage	4
Chapter-5: Retirement Planning Essential of individual retirement planning - Investing pension plan, basic principles of pension plans - Pension plans in India.	
Chapter-6: General Insurance Structure concept of General Insurance - Types of General Insurance, Marine Insurance, Motors Insurance, Agricultural Insurance - Fire Insurance, Personal Accident Insurance.	

Unit -3: personal insurance / Health Insurance	13
Chapter 7- Essential of Life and Health Insurance Fundamentals of Life and Health Insurance, functions of Life and Health Insurance - Health Insurance and Economic Development, Insurance and Farmer Security.	4
Chapter 8 - Insurance Documentation Health Insurance products, Health Insurance underwriting - Health Insurance claims.	4
Chapter 9 - Insurance Legislation The insurance act, 1938- Registration- Accounts and Returns-Investments -Limitation on expense of Management - Regulation of Insurance, Insurance regulation in India, role and need of regulation, history of insurance regulation in India - Insurance Reforms Development Authority (IRDA), performance of IRDA - Indian Insurance in global platform, future potential in Indian Insurance Business.	5

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		
References		
1	Chambers, R. (1983): Rural Development: Putting the Last First, Longman, Harlow.	
2	Dandekar, V.M. and N. Rath (1971): Poverty in India, GIPE, Pune.	
3	Dantwala, M. L. (1973): Poverty in India: Then and Now, 1870-1970, Macmillan, Bombay.	
4	Gupta. K .R. (Ed) (2003): Rural Development in India, Atlantic Publishers and Distributors, NewDelhi.	
5	Jain, Gopal Lal (1997): Rural Development, Mangal Deep Publications, Jaipur,	
6	Singh, Katar (1986): Rural Development: Principles, Polices and Management, Sage Publications,New Delhi, (Second Edition).	
7	Karalay, G. N. (2005): Integrated Approach to Rural Development: Polices, Programmes andStrategies, Concept Publishing Company, New Delhi.	
8	Maheshwari, S. R. (1985): Rural Development in India, Sage, Publications New Delhi.	
9	Satya Sundaram, I. (1997): Rural Development, Himalaya Publishing House, Delhi.	
10	Mehta, Shiv R. (1984): Rural Development Polices and Programmes, Sage Publications, New Delhi.	
11	Tyagi, B. P. (1998): Agricultural Economics and Rural Development, Jai Prakash Math and Co.,Meerut.	



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Third Semester
Course Title	Economics of Human Development		
Course Code:	OE-3.3	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to: CO1. Differentiate between Human Resource Development (HRD), Human Development (HD) and HRM CO2. Understand the concepts of Human security, describe dimensions of human development, and appreciate various practices and policies of human development, HDI and India.	
Contents	42 Hrs
Unit-1: Introduction to Human Development	12 Hrs
Chapter 1: Human growth and human development - Basic needs approach - Quality of life approach - Capability approach	04
Chapter 2: Human resource development (HRD), Human resource management (HRM).	04
Chapter 3: Human Development: meaning and definition, importance, and objectives.	04
Unit -2: Human Security, SDGs and Approaches to Human Development.	12Hrs
Chapter 4: Human Security: Economic security - Food security - Health security - Environmental security - Personal security - Community security - Political security.	04
Chapter 5: Sustainable Development Goals (SDGs): Understanding the SDGs - Linkages between humandevelopment and the SDGs.	04
Chapter 6: Indian Perspectives and Experience with Human Development: Approach to humandevelopment in national plans	04
Unit -3: Dimensions and Measurement of Human Development	18 Hrs

Chapter 7: Dimensions of Human Development: Empowerment - meaning and usage, Cooperation - definition and brief introduction, Equity - concept and usage, Sustainability – meaning and importance, Participation - concept, different forms of participation, Human development & Productivity - factors determining productivity.	06
Chapter 8: Measuring Human Development: Need for indices - limitations of per capita GDP as an indicator. Earlier indices (meaning): - Physical Quality of Life Index (PQLI), - Disability Adjusted Life Years (DALYs), - Social Capability Index. Human Development Index - HDI as compared to per capita GDP - Method of computing HDI - Critique of HDI. Other indices (meaning): Human Poverty Index (HPI)- Gender-related Development Index (GDI) - Gender Empowerment Measure (GEM).	08
Chapter 9: Selected Issues in Human Development: Impact of Globalisation on Human Development - Trade and Human Development. - Technology and Human Development	04

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Preparation report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		
References:		
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17. Dev, S. Mahendra, Piush Antony, V. Gayathri, and R.P. Mamgain, 2001, Social and Economic Security in India, Institute for Human Development, New Delhi		
18. Government of India, National Human Development Report 2002, Planning Commission, New Delhi		
19. Jaya Gopaki, R: Human Resource Development: Conceptual analysis and Strategies, Sterling Publishing Pvt. Ltd., New Delhi		
20. Naresh Gupta (2019), Human Development in India Emerald Publishers.		
21. Nadler, Leonard (2004). Corporate Human Resource Development, Van Nostrand Reinhold, ASTD, New York		
22. Padmanabhan Nair(2007) Human Development Index: An Introduction (Economy Series), ICFAI UNIVERSITY PRESS		

23. Papalia, D.E. , Olds, S.W. and Feldman, R.D. (2006). Human development.9th Ed. New Delhi: Tata McGraw- Hill.
24. Rao, T.V and Pareek, Udai (2005) Designing and Managing Human Resource Systems, Oxford IBH Pub. Pvt.Ltd., New Delhi.
25. Rao, T.V: Readings in HRD, Oxford IBH Pub. Pvt. Ltd., New Delhi,
26. Viramani, B.R and Seth, Parmila: Evaluating Management Development, Vision Books, New Delhi.
27. Rao, T.V. (et.al)(2003) HRD in the New Economic Environment, Tata McGraw-Hill Pub.Pvt, Ltd., New Delhi ,.
28. Rao, T.V: Human Resource Development, Sage Publications, New Delhi.
29. Viramani, B.R and Rao, Kala: Economic Restructuring, Technology Transfer and Human Resource Development, Response Books, New Delhi
30. United Nations Development Programme (2005); ‘Course Curriculum on Human Development-An Outline’, New Delhi

Websites:	
1	https://www.undp.org/sustainable-development-goals?c_src=CENTRAL&c_src2=GSR
2	https://hdr.undp.org/en/2020-report
3	https://www.un.org/millenniumgoals/
4	https://www.undp.org/india/publications/national-human-development-report-india
5	https://www.sdgfund.org/mdgs-sdgs

Journals	
1	Indian Journal of Training and Development
2	HRD Newsletter (NHRD Network)
3	American Journal of Training and Development
4	Personnel Today



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Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Monetary Economics		
Course Code:	DSC-4.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Understand the operation of the overall monetary economy and money	
CO2. What constitutes supply and demand for money as well as theories and approaches.	
CO3. Monetary policy and inflation and its impact on welfare	
Contents	42 Hrs
Unit-1: Introduction to money and monetary economics	16 rs
Chapter:1 Introduction: Theoretical and empirical definition of money -Role and Functions of Money -Paper currency – system of Note issue - weighted monetary aggregates	5
Chapter-2: Money demand and supply: Concepts of supply and demand for money- Microeconomic determinants of the demand for money and macroeconomic moneydemand functions - intermediaries, banks, and money creation - Money supply and price level - Determinants of money supply - High powered money - Money multiplier - The reserve ratio and deposit multiplier	10

Unit -2: Theories and approaches of demand for and supply of money	16 rs
Chapter-3: Theories of demand for money and supply: Tobin’s portfolio selection and Baumol’s transaction demand for money - Friedman’s restatement of quantity theory of moneyEndogenous money supply, Kaldor’s theory	8
Chapter-4: Approaches - demand for money and supply: Laidler’s buffer stock approach - Gurley-Shaw’s approach - Behavioural approach of money supply	7
Unit -3: Inflation and Monetary Policy	13 rs

Chapter-5: Inflation: Inflation – Types – causes – effects and Remedies -Monetarist view on Inflation-Concept of core inflation -measures of inflation (CPI, WPI, Core, Headline, GDP deflator) - Central bank's -measures of monetary control	5
Chapter-6: The welfare effects of inflation and monetary policy: Neutrality and super neutrality of money, welfare costs, and the inflation tax - The Classical model, flexible price economies and monetary policy - Rational expectations, representative agents and real business cycle theory. MIU, CIA, Lucas supply functions and the effects of monetary policy. The new Keynesian approach to monetary policy — nominal rigidities: New Keynesian Phillips curve, IS Curve, Taylor rules, financial accelerator models.	7

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Chandler, L. V. and S. M. Goldfeld, The Economics of Money and Banking, Harper & Row, New York, 1977.
2	M.L.Seth - Money Banking and International Trade ,Tata McGraw Hill Company Ltd., New Delhi, 1999.
3	Gupta, S B, (1995) Monetary Economics Institutions and policy, S.Chand& Co., New Dehi,
4	Mithani.D - Money Banking and International Trade.
5	Patinkin, Money, Interest and Prices, Harper and Row, New York.
6	Khan M. Y., Indian Financial System, Tata McGraw Hill, New Delhi, 1996.
7	Somashekar Ne. Thi., Principles of Macroeconomics, Scientific International Pvt. Ltd., Publications New Delhi
8	Somashekar Ne. Thi., ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Siddalingeshwara prakashana, Kalburgi.
9	H. R. Krishnaiah Gowda ಸಮಗ್ರ ಅರ್ಥಶಾಸ್ತ್ರ, Mysore book house prakashna, Mysore.
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Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Time Series Econometrics		
Course Code:	DSC-4.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Deal with comprehensive set of tools and techniques for analysing various forms of univariate and multivariate time series</p> <p>CO2. Understand the current literature in applied time series.</p> <p>CO3. Use statistical packages like STATA, E-views, SPSS and the like</p>	
Content of Theory	42 Hrs
Unit–1: Dynamic Econometric Models - Autoregressive and Distributed Lag Models	12 Hrs
Chapter:1 Role of lag in economics – Reasons for lag –distributed lag model – autoregressive model- Estimation of distributed lag models – Ad Hoc estimation – Koyck approach –mean lag- median lag	4
Chapter-2: Rationalization of Koyck model – Adaptive expectation model- stock adjustment or partial adjustment model –Combination of Adaptive expectation and partial adjustment models.	4
Chapter-3: Estimation of Autoregressive models: Method of instrumental variables (IV)- detection of autocorrelation in autoregressive models – Durbin h test- The Almon Approach to Distributed-Lag Models: The Almon or Polynomial Distributed Lag (PDL)	4
Unit -2: Time Series Econometrics	14 Hrs
Chapter-4: Basic Concepts of Time Series: Stylised characteristics of time series data- Basic concepts of time series model- stochastic process-, Stationary Process, Non-stationary process- random walk model – random walk without drift- random walk with drift –random walk around stochastic trend	4

Chapter-5: Unit Root Tests: spurious regression – non-stationarity or unit root tests – Graphs – Autocorrelation function (ACF)-partial autocorrelation function (PACF) The Augmented Dickey–Fuller (ADF) Test - The Phillips–Perron (PP) Unit Root Tests - A Critique of the Unit Root Tests- Transforming Nonstationary Time Series –difference stationary –Trend stationary.	4
Chapter-6: Cointegration: Meaning – Regression of unit root time series – Testing for Cointegration – Engle-Granger two step test – Johansen test: maximum eigenvalue test Trace test- Phillips –Ouliaris three step test-Error correction mechanism	6
Unit -3: Time Series Econometrics: Forecasting	16 Hrs
Chapter-7: Approaches to Economic Forecasting: exponential smoothing – Single equation regression models – Simultaneous equation regression models – ARIMA models	3
Chapter-8: AR, MA, and ARMA and ARIMA Models: Autoregressive models (AR)- Moving average models(MA)-Autoregressive moving average models(ARMA)- Autoregressive integrated moving average models (ARIMA)	6
Chapter-9: Box-Jenkins (BJ) Methodology: Steps involved in BJ method – Identification: Autocorrelation function (ACF)-partial autocorrelation function (PACF) –Estimation-Diagnostic checking- Forecasting	7

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		
References		
1	Gujarati, D. N., Porter D.C., Gunasekar S., “Basic Econometrics”, Mc Graw Hill, 5th Ed, 2012	
2	Marno Verbeek, 2017,“A Guide to Modern Econometrics”, John Wiley & Sons, Ltd, 5 th Edition.	
3	Enders, W., “Applied Econometric Time Series”, Wiley 4th Edition, 2018	
4	Baltagi, B.H. “Econometric analysis of panel data”, John Wiley and Sons, 5th Edition,2013	
5	Koutsoyiannis, A, Theory of Econometrics	

References	
6	Brooks, C., “Introductory Econometrics for Finance”, Cambridge Universitypress, 4 th
7	Edition, 2019
8	Baltagi, B.H. “Econometric analysis of panel data”, John Wiley and Sons, 5thEdition,2013
9	Pindyck, R.S. and Rubinfeld, D.L., “Econometric Models and EconomicForecasts” 4th Ed
10	Jeffrey M. Wooldridge Econometric Analysis of Cross Section and PanelData, MIT Press
11	Wooldridge, J. M., “Introductory Econometrics: An Introductory Approach”,South Western, Cengage Learning, 5th Edition, 2013



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Karnataka Economy		
Course Code:	OE 4.1	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Understand the nature of economic growth and problems of Karnataka state.</p> <p>CO2. Explain the process of structural growth in Karnataka Economy</p> <p>CO3. Evaluate the policies and programmes undertaken by the Govt. of Karnataka for bringing about socio-economic development</p>	
Contents	42 Hrs
Unit-1: Karnataka Economy – An overview	12 Hrs
<p>Chapter:1 Characteristics of Karnataka Economy Features of Karnataka economy -Trends and sectoral distribution of state domestic product and per capita income Measures to redress regional imbalances – Dr. Nanjundappa committee report,- Article 371J</p>	5
<p>Chapter-2: Human Resources Human resources: importance, size and health indicators - Human Development Index - Poverty and unemployment– Eradication programmes</p>	4
<p>Chapter-3: Natural Resources Management Natural Resources: Importance and volume of different natural resources - Karnataka environmental policy</p>	3
Practicum: Conduct field visit to Forest/Reservoir/Mining and prepare the report	
Unit -2: Agriculture, Rural development, and Industries in Karnataka	18 Hrs

Chapter-5: Rural Development Public distribution system - Rural development programmes (brief) - Government schemes for rural women	4
Chapter-6: Industries 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	7
Practicum: visit to industrial units in local area and prepare the report/Trace-out the impact of Prof. D. M. Nanjundappa Committee report	
Unit -3: Infrastructure and Finance in Karnataka	12 Hrs
Chapter-7: Economic Infrastructure Transportation: Road, Rail, Water and Air transport. Information and communication technology facilities	3
Chapter-8: Social Infrastructure Drinking water - Housing and Sanitation - Health and Education - Rural Electrification	4
Chapter-9: State Finance Sources of Revenue: Direct and Indirect Taxes - Impact of GST on Karnataka economy - State Expenditure - State Finance Commission -Current State Budget (Brief)	5
Practicum: Discussion on State budget	

Pedagogy

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

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, NewDelhi.
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	Somashekar Ne. Thi., ಕರ್ನಾಟಕ ಆರ್ಥಿಕತೆ, Siddalingeshwara publications, Kalburgi.
10	Nanjundappa D.M. Some Aspects of Karnataka Economy.
11	Puttaswamiah K. Karnataka Economy, Two Volume ಕರ್ನಾಟಕ ಆರ್ಥಿಕತೆ



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Entrepreneurial Economics		
Course Code:	OE 4.2	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Start own business as Entrepreneur	
CO2. Enabling the students to find career opportunities in business.	
CO3. To enable the students to gain knowledge and skills needed to run a business successfully.	
Contents	42 Hrs
Unit-1: Entrepreneur and Entrepreneurship	12 Hrs
Chapter 1: Entrepreneur and Entrepreneurship: Meaning, Definitions, Evolution, types, Characteristics, qualities and functions of entrepreneur- Distinction between entrepreneur and manger, Distinction between entrepreneur and intra-preneur,	05
Chapter 2: Role and importance of Entrepreneurship: Role and importance of Entrepreneurship in economic development, Factors influencing entrepreneurship’- Psychological, social, economic and environmental.	04
Chapter 3: New generations of entrepreneurship: New generations of entrepreneurship: social, health, tourism and women entrepreneurship; barriers to entrepreneurship.	03
Unit -2: Launching Entrepreneurial Ventures	12 Hrs
Chapter 4: Generation of ideas: Generation of ideas: Methods and process - sources of ideas - screening process- Assessing opportunities-Challenges, pitfalls and critical factors of new venture;	04
Chapter 5: Business plan Business plan - New ventures: Steps involved in setting up a business – identifying, selecting a	04

good business opportunity, Market survey and research, techno-economic feasibility assessment.	
Chapter 6: Role of Innovation & Creativity: Innovation- Meaning and importance of innovation; Types of innovation; Sources of innovation; Conditions for effective innovation at Organization level.	04

Unit -3: Business and Entrepreneurial development	18 Hrs
Chapter 7: Creativity: Creativity: Concept and process of creativity; role and importance of creativity and mental blocks to creativity; branding, trademarks, patents, copyrights, and registered design protection- Methods of protecting innovation and creativity.	05
Chapter 8: Entrepreneur Assistance: Entrepreneur Assistance: Assistance to an entrepreneur-Industrial Park (Meaning, features, & examples)-Special Economic Zone (Meaning, features & examples)-Financial assistance by different agencies-License, Environmental Clearance, e-tender process, Excise exemptions and concession, Exemption from income tax -Quality Standards with special reference to ISO.	06
Chapter 9: Business and Entrepreneurial development Business and Entrepreneurial development: Determining and acquiring required resources (Financial, Physical and Human): Search for entrepreneurial capital- Debt vs. Equity; Venture Capital Market; Angel financing and alternative sources of finance for entrepreneurs. Entrepreneurship development programme (EDP) in India– Objectives, phases, and inputs of EDP; - Government initiatives for entrepreneurship – Make in India, Start-up India, MUDRA etc.	07

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

06

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

References	
1	Donald F Kuratko (2014) "Entrepreneurship – Theory, Process and Practice", 9 th Edition, Cengage Learning.
2	Khanka. S.S., (2013) "Entrepreneurial Development" S.Chand & Co. Ltd., Ram Nagar, New Delhi,.
3	Kuratko and Rao, Entrepreneurship: A South Asian Perspective; Ferrell, Fraedrich, Farrell, Business Ethics, Cengage Learning
4	Entrepreneurship, R. Saibaba, Kalyani Publishers, New Delhi.
5	Entrepreneurship Development and Business Ethics, Sanjeet Sharma – V.K. Global Pvt. Ltd., New Delhi
6	SS Khanka, Entrepreneurial Development, S. Chand & Co, Delhi.
References	
7	Desai, Vasant. Dynamics of Entrepreneurial Development and Management. Mumbai, Himalaya Publishing House
8	Plsek, Paul E. Creativity, Innovation and Quality (Eastern Economic Edition), New Delhi:Prentice-Hall of India. ISBN-81-203-1690-8.
9	Singh, Nagendra P. Emerging Trends in Entrepreneurship Development. New Delhi: ASEED.
10	Entrepreneurship Development and Business Ethics - M K Nabi, K C Rout, Vrinda Publications (P) Ltd
11	Robert Hisrich and Michael Peters, Entrepreneurship, Tata Mc Graw– Hill Vasant Desai, Entrepreneurship
12	Marc J Dollinger, Entrepreneurship – Strategies and Resources, Pearson Education
13	Venkateshwara Rao and Udai Pareek,(Eds)Developing Entrepreneurship-A Handbook
14	Ravi J. Mathai, Rural Entrepreneurship A Framework in Development Entrepreneurship –Ahandbook



Government of Karnataka

Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Economics and Law		
Course Code:	OE 4.3	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

<p>Course Outcomes (COs): After the successful completion of the course, the student will be able to:</p> <p>CO1. Comprehend the basic economic issues affecting the economy along with the related legal provisions</p> <p>CO2. Acquire knowledge on the basic provisions of law relating to consumer activities, business organizations, environment</p> <p>CO3. To appreciate the understanding the law framework in order to frame the economics model closer to reality.</p> <p>CO4. To enable the students to understand the consequences of legal rules, primarily as an exercise in applied microeconomics, macroeconomics, industrial and international economics.</p>	
Contents	42 Hrs
Unit–1: Economic analysis of law	14 Hrs
<p>Chapter 1: Introduction to legal reasoning</p> <p>Efficiency- Markets and efficiency - Market failure - Coase theorem and related ideas.</p>	5
<p>Chapter 2: welfare economics</p> <p>Compensation principles - Social welfare function - Maximization problem</p>	4
<p>Chapter 3: Economic Reasoning</p> <p>Nature of economic reasoning - Economic approach to law – History – Criticism</p>	5
<p>Practicum:</p> <p>3. Group Discussions on Economic reasoning.</p> <p>4. Assignment on Coase theorem and related issues</p>	

Unit -2: An Introduction to Law and Legal Institutions	12 Hrs
Chapter 4: Law Definition -Territorial Nature of Law - Kinds of Law - General Law and Special Law - Kinds of Special Law	4
Chapter 5: Civil law and the and the Common Law Traditions The institutions of the federal and State Court systems - The nature of legal dispute - How legal rules evolve	4
Practicum: 3. Group Discussions on Civil law and the and the Common Law Traditions 4. Assignment on the different kinds of Law	
Unit -3: Economic Laws	16 Hrs
Chapter 6: Law Relating to Consumer Activities Bargaining theory - Economic theory of contract - Defining tort law - Economics of tort liability - Definition of Consumer - Consumer protection; The Consumer Protection Act, 2019 - Consumer courts.	5
Chapter 7: Law of Business Organizations Structure of firm — Kinds, Corporations -Capital, Shares, Debentures, Insiders' and trading- RBI, IRDA, MRTP, Role of SEBI,	
Chapter 8: Macroeconomics and Law Inequality; Contract theory of Distributive justice - Economic and social costs of poverty - Wealth distribution by Liability Rules – Taxation and efficiency - National and global environmental problems and international environmental agreements - their legal and economic implications	
Practicum 3. Hold the moot court in the classroom and let there be discussion consisting of at least two or more different views on National and Global environment problems and acts. 4. Discuss the case studies on Economic and social costs of poverty and consumer court judgements protecting the consumers.	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	Bouckaert, B. and G. De Geest (Ed.) (1999), Encyclopaedia of Law and Economics, (Volume I to V), Edward Elgar Publishing Ltd., U.K.
2	Cooter, R.D. and T.S. Ulen, (2000), Law and Economics, (3rd Edition), Addison Wesley, New York.
3	Dan-Schmidt, K.G. and T.S. Ulen (Ed.) (2000), Law and Economic Anthology, Addison Wesley, New York.
4	Newman, P. (Ed.) (1998), The New Palgrave Dictionary of Economics and Law, Stockton Press, New York.
5	Oliver, J.M. (1979), Law and Economics, George Allen and Unwin, London.
6	Posner, R.A. (1998), Economic Analysis of Law, (5th Edition), Little Brown, Boston.
7	Posner, R.A. and F. Parisi (Eds.) (1997), Law and Economics, Edward Elgar Publishing Ltd., U.K.
8	Massey, I.P. (1995), Administrative Law, Eastern Book Company, Lucknow.
9	Indian Law Institute, Annual Survey of Indian Law, Indian Law Institute, New Delhi.



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Model Curriculum

Program Name	B Sc in Economics	Semester	Fourth Semester
Course Title	Economics of GST		
Course Code:	OE 4.4	No. of Credits	3
Contact hours	42 Hours	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): After the successful completion of the course, the student will be able to:	
CO1. Acquire knowledge on indirect taxes with special reference to GST	
CO2. Acquire the theoretical and application knowledge of GST and its Evolution in India	
CO3. To enable the students to understand the GST Law, ITC, Valuation of supply and returns	
CO4. Simple calculation of GST and Input Tax Credit, Valuation of Supply (Numerical on valuation and calculation of tax)	
Contents	42 Hrs
Unit-1: Introduction to Economics of GST	14 Hrs
Chapter 1: Indirect taxes before GST	5
Indirect Taxes-Meaning, Types with examples -Constitutional framework of Indirect Taxes before GST (Taxation Powers of Union & State Government) -Concept of VAT: Meaning, Variants and Methods;	
Chapter 2: Reforms in Indirect Taxes	4
Major Defects in the structure of Indirect Taxes prior to GST; Need for Tax reforms - Kelkar committee on Tax Reforms	
Chapter 3: Introduction to GST	5
Rationale for GST - Constitution [101st Amendment] Act, 2016 - GST- Meaning, Overview of GST - Taxes subsumed under GST - Territorial Jurisdiction of GST- Multiple rates of GST - Recent reforms in GST.	
Practicum:	
3. Group Discussions on Indirect Taxes defects prior to GST.	
4. Assignment on Types of Indirect Taxes prior to GST and After introduction of GST.	

Unit – 2 Fundamentals of GST	12 Hrs
Chapter 4: GST Structure in India, GST: Advantages and Disadvantages - One Nation-One Tax - Structure of GST -Features of Single and Dual GST Model	4
Chapter 5: Dual GST Mode and GST Council Dual GST Mode in India: (SGST, CGST, UTGST & IGST) - Goods and Services Tax Network [GSTN] - GST Council; Creation, Members, Decisions, Compensation to states - GST Network – Registration.	4
Practicum: 3. Group Discussions on advantages and disadvantages of GST 4. Hold the moot of GST Council in the class room and decide the different slabs of GST	4
Unit -3: Taxes and Duties	16 Hrs
Chapter 6: Transactions and taxes covered and not covered Transactions and taxes covered under GST - Taxes and duties outside the purview of GST - Tax structure Computation - Administration of Tax on items containing alcohol, petroleum products, tobacco products - Taxation on services.	4
Chapter 7: Levy and Collection of Tax Taxable event- “Supply” of Goods and Services - Place of Supply: Within state, Interstate Levy and Collection - Import and Export; Time of supply - Valuation for GST- Valuation rules - Taxability of reimbursement of expenses - Exemption from GST: Small supplies and Composition Scheme Classification of Goods and Services: Composite and Mixed Supplies.	6
Chapter 8: Input Tax Credit Eligible and Ineligible Input Tax Credit - Apportionments of Credit and Blocked Credits - Tax Credit in respect of Capital Goods - Recovery of Excess Tax Credit - Availability of Tax Credit in special circumstances - Transfer of Input Credit (Input Service Distribution) -Payment of Taxes; Refund; Doctrine of unjust enrichment.	6
Practicum 4. Simple illustrations on calculation of GST and Input Tax Credit, 5. Valuation of Supply (Numerical on valuation and calculation of tax) 6. Simple calculation Adjustment of Input tax credit against output CGST, SGST, IGST.	

Pedagogy: Classroom lecture, tutorials, Problem solving exercise

Formative Assessment for C1 & C2		
Assessment Occasion/ type	Marks	
	C1	C2
Internal Test	10	10
Assignment/Seminar	05	
Quiz	05	
Case study / Field work / Project work/ Industrial Visit and Prepare a report	-	10
Total	40 Marks	
<i>Formative Assessment as per NEP guidelines are compulsory</i>		

Note: Strictly follow the Practicum

References	
1	The Central Goods and Services Tax, 2017
2	The Integrated Goods and Services Tax, 2017
3	The Union Territory Goods and Services Tax, 2017
4	The Goods and Services Tax (Compensation to States), 2017
5	The Constitution (One hundred and First Amendment) Act, 2016
6	Gupta, S.S. , <i>GST- How to meet your obligations (April 2017)</i> , Taxmann Publications
7	Datey, V.S. (2019) . <i>Indirect Taxation</i> . New Delhi <i>Vastu and Sevakar Vidhan</i> by Government of India
8	Mehrotra, H.C. & Goyal, S.P.(2019), <i>Indirect Taxes</i> , Agra: Bhawan Publications.

CBCS Question Paper Pattern for UG Semester
DSC, DSEC & OEC

Paper Code:		Paper Title:	
Duration of Exam	2.30 Hours	Max Marks	60 Marks
Instruction:	Answer all the sections		

Section-A

1. Answer ALL the following sub-questions, each sub-question carries ONE mark	(10X1=10)
A. B. C. D. E. F. G. H. I J.	
<i>Note for Section-A: Three sub-questions from each unit and remaining one sub-question (J) from unit I to III.</i>	

Section-B

Answer any FOUR of the following questions, each question carries FIVE marks	(4X5=20)
2. 3. 4. 5. 6. 7.	
<i>Note for Section-B: Minimum Two question from each unit (Q No 2 to 6)</i>	

Section-C

Answer any THREE of the following questions, each question carries TEN marks	(3X10=30)
--	-----------

08.

09.

10.

11.

12.

13.

Note for Section-C: Minimum Two question from each unit (Q No 8 to 13) Sub-questions such as 'a' and 'b' may be given for a question in section-C only.

Course Content

Semester

Course Title: Financial Education and Investment Awareness	Course Credits: 2
Total Contact Hours: 15 Hours of Theory and 30 Hours of Practical Sessions	Duration of ESA: 90 Minutes
Formative Assessment Marks: 20	Summative Assessment Marks: 30
Model Syllabus Authors: NSE Academy and Karnataka State Higher Education Council	

Course Outcomes

The Course aims to:

1. Provide the foundations for financial decision making
2. List out various saving and investment alternatives available for a common man
3. Give a detailed overview of stock markets and stock selection
4. Orient the learners about mutual funds and the criteria for selection

Course Articulation Matrix

Program Outcomes / Course Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
1. Provide the foundations for financial decision making												
2. List out various saving and investment alternatives available for a common man												
3. Give a detailed overview of stock markets and stock selection												
4. Orient the learners about mutual funds and the criteria for selection												

Course Content for 'Financial Education and Investment Awareness' Theory Content

Module No.	Theory Content under the Module	Duration
One	<p>Foundations for Finance</p> <p>Introduction to Basic Concepts: Understand the need for financial planning – basic concepts – life goals and financial goals – format of a sample financial plan for a young adult</p> <p>Economics: Meaning – scope – key concepts influencing decision making both micro & macro</p> <p>Banking in India: Types of Bank Deposits, Deposit Insurance (PMJDY). Traditional and New Banking Models. Debit and Credit Cards. Digital Payment System – Internet Banking (NEFT, RTGS and IMPS), Mobile Banking, Mobile Wallet, AEPS, UPI</p> <p>Orientation to Financial Statements: financial terms and concepts, model for reading financial statements, basic ratios for evaluating companies while investing – Time Value of Money – Concept of Compounding and Discounting</p>	4 hours
Two	<p>Investment Management</p> <p>Investment Goals: Basic investment objectives – Investment goals – time frame – assessing risk profile – concept of diversification – risk measurement tools</p> <p>Investment and Saving Alternatives for a Common Investor: Insurance – Health, Life and Other General Insurance (Vehicle Insurance, Property Insurance, etc), Retirement and Pension Plans – National Pension System, Atal Pension Yojana, PM-SYM Yojana, PMLV MY PMKMDY etc., Stocks, Bonds, Mutual Funds. Investor Protection and Grievance Redressal</p> <p>Stock Markets: Primary Market and Secondary Market, Stock Exchanges, Stock Exchange Operations – Trading and Settlement, Demat Account, Depository and Depository Participants.</p> <p>Stock Selection: Fundamental Analysis – Economy Analysis, Industry Analysis and Company Analysis. Technical Analysis – Graphical Patterns, Candle-stick Patterns, Indicators and Oscillators</p>	8 hours

	<p>Stock Return and Risk: Analysing risk and returns trade off-relationship-investment risk</p>	
<p>Three</p>	<p>Mutual Funds and Financial Planning Essentials</p> <p>Mutual Funds: Features of Mutual Funds, Mutual Fund History in India, Major Fund Houses in India and Mutual Fund Schemes. Types of Mutual Fund Plans. Net Asset Value.</p> <p>Criteria for selection of Mutual Funds: Returns, Performance Measures – Sharpe, Treynor, Alpha, Beta and r^2</p> <p>Financial Planning: Sample formats – Integrating all the concepts learnt with a personal financial plan</p> <p>Giving and supporting: Family support – charitable giving – crowd sourcing for needs</p>	<p>3 hours</p>

Practical Content

Module No.	Practical Coverage under the Module	Duration
<p>One</p>	<p>Foundations for Finance</p> <ul style="list-style-type: none"> • Spreadsheet Modelling: <ul style="list-style-type: none"> • IF Function • SUM Function • AVERAGE Function • INDEX, MATCH and VLOOKUP Function • RANK Function • SUMPRODUCT Function • MAX & MIN Function • ERRORS in Modeling (#VALUE!, #NAME?, #DIV/0!, #REF!, #NUM!, #NA) • PRESENT VALUE Functions • FUTURE VALUE Functions • ANNUITY Functions • PERPETUITY Functions • Statistical Functions in Excel • Financial Statements in Excel 	<p>7 hours</p>
<p>Two</p>	<p>Investment Management</p> <ul style="list-style-type: none"> • Administering Risk Tolerance Tool 	<p>17 hours</p>

	<ul style="list-style-type: none"> • Group Presentations on Investment Alternatives (Advantages, Suitability and Limitations) • Demonstration of Stock Trading • Economy Analysis (www.tradingeconomics.com) • Industry Analysis (www.ibef.org) • Company Analysis (www.valueresearchonline.com) • Spreadsheet Modelling for Stock Valuation (Dividend Discount Model, Free Cash Flow and Relative Valuation) • Demonstration of Technical Analysis and Exercises (NSE – TAME) • Spreadsheet Modelling for calculating Stock Return, Risk and Beta 	
Three	<p style="text-align: center;">Mutual Funds and Financial Planning Essentials</p> <ul style="list-style-type: none"> • Identification of Fund Houses in India, Schemes and Plans of each Mutual Fund House (www.amfiindia.in , www.valueresearchonline.com) • Exercises on Calculation of Net Asset Value • Demonstration of Mutual Fund Fact Sheet • Exercises on reading performance measures and selection of Mutual Funds • Preparation of Financial Plan 	6 hours

References

1. RBI Financial Education Handbook
2. NSE Knowledge Hub, AI-powered Learning Experience Platform for BFSI
3. NSE Academy Certification in Financial Markets (NCFM) Modules:
 - a. Macroeconomics for Financial Markets
 - b. Financial Markets (Beginners Module)
 - c. Mutual Funds (Beginners Module)
 - d. Technical Analysis

Text Books:

S. No	Author/s	Title of the Book	Publisher
1	Prasanna Chandra	Financial Management	McGraw Hill Education
2	Aswath Damodaran	Corporate Finance	John Wiley & Sons Inc
3	Pitabas Mohanty	Spreadsheet Skills for Finance Professionals	Taxmann Publications
4	Fischer & Jordan	Security Analysis & Portfolio Management	Prentice Hall

Websites:

1. www.sebi.gov.in
2. www.nseindia.com
3. www.amfiindia.com

Question Paper Pattern

1. Internal Assessment – 40 marks (based on practical lab-based assignments)

2. End Semester Exam – 60 marks

Section A: 8 out of 9 questions (2 marks each) 8 X 2 = **16 Marks**

Section B: 4 out of 5 questions (6 marks each) 4 X 6 = **24 Marks**

Section C: Compulsory:

Analysis of One Case or Two case-lets 1 X 20 = **20 Marks**

Pedagogy

1. Highlights of the contents of interactive E-workbook

- Micro and Macro-Indicators affecting Personal Financial Planning
- Financial plan templates with examples/ scenarios
- Financial Goal setting / Financial Goals Worksheet
- Stock Selection
- Criteria for selection of Mutual Funds
- Investment options for young adults who enter professions
- Financial security worksheet
- Glossary of must know key terms

2. Online Diagnostic Assessments / Instruments

Type	Method	Outcome
Quiz	Flash cards and games	Instructive and persuasive for behavioural change
Projections	Personal Budget based assessment	Assimilation, application and retention through case scenarios
Preassessments	Financial life skills Investor Risk Profile Risk Measurement Skills	Benchmark knowledge according to the requirements of the age and situation
Psychometric assessments	Financial stress scale	Create follow up assignments that sustain changed behaviours

3. 10 Recorded self-help videos 12 minutes each from experts

Implementation Plan

1. On the approval of the Course Outline and Assessment Mechanism by the Council, NSE Academy - in association with universities, will delegate Nodal Officers for the implementation of the Program.
2. With the help of the Nodal Officers, NSE Academy will invite nominations from colleges and institutions for the Train the Trainer Programs (both physical and virtual).
3. The faculty members will undergo a rigorous training in TTT and also an assessment leading to a joint Certification from NSE Academy and the corresponding university.
4. NSE Academy will support the faculty members through specially created courses on NSE Knowledge Hub.
5. NSE Academy will also support the faculty members with comprehensive training material and facilitator aids for training the students.
6. Additionally, the Commerce and Management faculty members will be supported with continuous learning programs on NSE Knowledge Hub, on relevant topics.
7. NSE Academy will design, develop and provide customized student-friendly interactive workbooks (digital) that will support classroom learning as formative assessment.
8. NSE Academy will send the printed final examination question papers to the Nodal Officers / CoEs of the Universities and Institutions to be further distributed to their affiliated colleges.
9. Based on the assessment report by the Universities / Colleges / Institutions, NSE Academy will issue a Course Completion Certificate jointly with the corresponding university.
10. NSE Academy will support faculty members on research topics through research workshops on quantitative and qualitative research.
11. NSE Academy will confer the 'Best Research Proposal Award' for the faculty members
12. NSE Academy will invite (from students) and select five best project proposals for award.


UNIVERSITY OF MYSORE
Estd. 1916

Vishwavidyalaya Karyasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21

Dated:10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Geography (UG)
(III & IV Semester) with effective from the Academic year
2022-23 as per NEP-2020.

- Ref:-**
1. Decision of Board of Studies in of Geography (UG)
Meeting held on 04-06-2022.
 2. Decision of the Faculty of Science & Technology Meeting
held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Geography (UG) which met on 04-06-2022 has recommended & approved the syllabus and pattern of Examination of Geography Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively has also approved the above said syllabus and hence it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft Approved by the Registrar


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Geography, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Earth Science, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan,
Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative
Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of
Mysore, Mysuru.
10. Office Copy.

University of Mysore
B.A. / B.Sc. (Geography) Degree
(Basic / Honours)
Scheme & Syllabus - NEP-2020
Second Year

Semester	Course code	Course title	Teaching hours	Hours / week	Examination Pattern- Max & min marks/ paper		Duration of Examination in Hrs	Total Marks	Credits
					Exam	IA			
III	DSC T 3.1	Fundamentals of Human Geography	56	4	60	40	2	100	4
	DSC P 3.1	Fundamental Techniques in Human Geography	56	4	25	25	2	50	2
	OE 3.1	Geography of India	42	3	60	40	2	100	3
	OE 3.2	Application of GIS and Remote sensing	42	3	60	40	2	100	3

semester	Course code	Course title	Teaching hours	Hours / week	Examination Pattern- Max & min marks/ paper		Duration of Examination in Hrs	Total Marks	Credits
					Exam	IA			
IV	DSC T 4.1	India: Resources and Sustainability	56	4	60	40	2	100	4
	DSC P 4.1	Representation of Indian Geographical features and resources.	56	4	25	25	2	50	2
	OE 4.1	Geography of Karnataka	42	3	60	40	2	100	3
	OE 4.2	Population and settlement Geography	42	3	60	40	2	100	3

B.A. / B.Sc. honors Programme

Semester III

Title of the Course: Fundamentals of Human Geography

CODE: DSC T 3.1

Number of Theory Credits	Number of lecture hours/semester
4	56
Course Outcomes: <ol style="list-style-type: none">1. Students will earn Basic concepts, approaches and development of Human Geography.2. Learn how human interact with environmental components of the world and also learn how human beings and environment mutually influences one another.3. Students will be familiarized with cultural and economic processes at different scales such as globalization, trade, cultural and social activities.4. The student will be able differentiate between geography and human geography.5. Understand population dynamics and human settlements.	
Course Objectives: <p>This course aims to</p> <ol style="list-style-type: none">1. Understand the basics concepts and approaches of human geography2. Study the nature and distribution of cultural elements and their process and to appraise the mutual interaction between People and places.3. To examine the population attributes and dynamic nature of them.4. To study different types of economic activities and their adaptation with the environment and their impact on the development of the regions.	
Module –1: Introduction to Human Geography	
	14
1.1 Nature and scope, Development and Branches of Human Geography, 1.2 Themes in Geography: Location, Place, Human-Environment Interaction, Movement and Region. 1.3 Man- Environment Relation: Environmental Determinism and Possiblism, Neo-Determinism (stop and go determinism) 1.4 Approaches to Human geography: Exploration and Descriptive Approach, Regional Approach, Areal Differentiation Approach, Spatial organization Approach. Modern Approaches: Welfare or Humanistic Approach, Radical Approach, Behavioral Approach, Post Modernism in geography.	
Module –2: Cultural patterns and Processes	
	14
2.1 Concept of culture, Material and Non-material Culture, Cultural traits and Cultural regions. 2.2 Meaning and Definition of races, Classification of races, Main characteristics (traits) and Broad racial groups of the world and their distribution. 2.3 Languages: Classification and Distribution of languages. 2.4 Religion: Types, Classification, and Distribution of religions: Hinduism, Christianity, Islam and Buddhism. Assignment: Each student is expected to prepare a brief report on the cultural composition of their own locality/ place/ village/ ward/town or neighborhoods through field investigation and also can use published data.	

Module –3: Population and Settlements	14
<p>3.1 Distribution and Growth of Population; Factors affecting population Distribution.</p> <p>3.2 Density of Population: Meaning and Types; Arithmetic Density, Physiological Density and Agricultural density, Regional Distribution of Density of Population; Carrying capacity and Sustainability,</p> <p>3.3 Concept of Settlements, Origin and evolution of Human settlements, Factors of settlements, origin and distribution, types and pattern of settlements,</p> <p>3.4 Rural and Urban settlements, Trends and Patterns of World Urbanization.</p> <p>Field Activity: Students should study and identify the factors influencing on the origin and growth of the settlement and each student is expected to identify patterns of settlements by visiting nearest settlement. The students are advised to carry topographical map of the place during field visit.</p>	
Module–4: Economic Activities	14
<p>4.1 Concept and Classification of Economic activities; Factors affecting Economic Activities.</p> <p>4.2 Primary Economic Activities – Agriculture, Types: Primitive Subsistence, Intensive Subsistence, Plantation Agriculture, Extensive Commercial grain Cultivation, Mixed Farming, Dairy Farming.</p> <p>4.3 Secondary Activities: Manufacturing, Classification – 1. Based on size – Small Scale and Large scale.2. Based on Raw Material – Agro-based, Mineral based, Chemical Based and Forest based. Industrial Regions of the world.</p> <p>4.4 Tertiary Activities: Types: Trade and Commerce, Retail Trading Services, Wholesale Trading, Transport and communications: Factors, Communication Services – Telecommunication. Services: Informal and Non formal sector. Information technology and service.</p> <p>Case Study: Students have to visit a village/a town nearby and observe the economic activities and understand different classes and identify the most dominant economic activities..</p>	

References

- 1) De Blij H. J., Alexander B Murphy, Erin H Fouberg, (2006) Human Geography: people, Place and culture, Abe books Published by Wiley ISBN 10: 0471679518 / ISBN 13: 9780471679516
- 2) Sarah Bendarz, Mark Bockenbauer, Fredrik Hiebert, 2020, Human Geography: A Spatial Perspective; NatlGeographics School Pub Inc.
- 3) Majid Hussein 2018 Human Geography, Rawat Publication (Fifth Edition)
- 4) David Dorrell, Joesph Henderson, Todd Lindley and Georgeta Cannor (2019) Introduction to Human Geography, University System of Georgia, <https://ung.edu/university-press/books/introduction-to-human-geography.php>
- 5) Hartshorne, T.A., & Alexander, J.W. (2010). Economic Geography. New Delhi: PHI Learning.
- 6) Nellson, Gabler Vining (1995) Human Geography, People, Cultures and Landscapes
- 7) Ranganath (2002) Principles of Human Geography (Kannada Version) Vidyanidhi, Gadag
- 8) Rubenstein J.M (2016). An Introduction to Human Geography, Macmillan Publishing Company, New York
- 9) Knox, P., Agnew, J., & McCarthy, L. (2008). The Geography of the World Economy. London: HodderArnold.
- 10) Lloyd, P., & Dicken, B. (1972). Location in Space: A Theoretical Approach to Economic

Geography. New York: Harper and Row.

11) Siddhartha, K. (2000). Economic Geography: Theories, Process and Patterns, New Delhi: Kishore Kishore Publications.

12) Smith, D.M. (1971). Industrial Location: An Economic Geographical Analysis, New York: John Wiley and Sons.

B.A./ B.Sc. honors Programme

Semester III

Title of the Course: Fundamental Techniques in Human Geography, CODE: DSC P 3.1

Number of Theory Credits	Number of lecture hours / semester
2	56
<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. Students will learn the geographical concepts such as scale, map, projections, distance, direction, and learn how these features are used in map production and area visualization. 2. Students will be familiarized with different methods of computing population growth, understanding the techniques of nearest neighbor analysis. 3. The student will be able to understand the factors affecting settlement development and economic activities therein. 	
<p>Course Objectives:</p> <p>This course aims to</p> <ol style="list-style-type: none"> 1. Understand the application of cartography in mapping of population 2. Study population growth models 3. Introduce how economic, cultural, and trade activities impact on the development of the settlement 	

Content of the Practical Course		
Exercise 1	<p>Maps: Definition, Elements of map: scale, direction, map projection, conventional signs and symbols, legend,</p> <p>Types of map: 1. Based on scale: A. large scale: cadastral maps, Topographic maps, B. Small scale: wall maps, atlas maps, maps</p> <p>2. Based on purpose and content: Physical Maps, Political Maps, Thematic Maps. Uses of Maps.</p>	08
Exercise 2	<p>Map Scales: Definition of Scale, Methods of representing Scales: Statement Method, Graphical Method, Ratio Method (R F).</p>	08
Exercise 3	<p>Conversion of Scale: Verbal to RF, RF to Verbal, Verbal to Graphical.</p> <p>Exercises on Measuring Distances on Map and converting map distance to ground distance.</p>	08
Exercise 4 and 5	<p>Map Projections: Meaning and Purpose, Latitudes and Longitudes, Classification of Map Projections and their general properties: Conical Projections, Cylindrical Projections, Zenithal Projections. UTM Projections. Choice of Map Projection.</p>	08
Exercise 6	<p>Drawing of conical projection with One Std. Parallel and Two Std. Parallels,</p>	08

Exercise 7	Drawing of Cylindrical Equal Area Projection.	06
Exercise 8	Drawing of Zenithal Polar Gnomonic Projection.	06
Exercise 9	Introduction to UTM Projection, uses and importance.	4

References:

1. Dr.L.R.Singh (2010), Fundamentals Of Practical Geography, Sharda Pustak Bhavan, Allahabad, India.
2. Pijushkanti Saha, Partha Basu (2013) Advanced Practical Geography
3. Ashis Sarkar (2015) Practical Geography: A Systematic Approach, Orient Black swan Pvt Ltd.
4. Rana Pb Singh Rl Singh(2018), Elements of Practical Geography. Kalyani Publishers
5. Dent B.D., 1999. Cartography: Thematic Map Design, (Vol. 1), McGraw Hill
6. Gupta K.K and Tyagi V.C., 1992. Working with Maps, Survey of India, DST, New Delhi.
7. Mishra R.P. and Ramesh A., 1989. Fundamentals of Cartography, Concept Publishing.
8. Monk house, F.J. and Wilkinson, H.R., 1971. Maps and Diagrams. Methuen and Co. Ltd., London. K.
9. Singh, R.L., 2005. Elements of Practical Geography. Kalyani Publishers, New Delhi. India.

B.A. /B.Sc. Honors Programme

III Semester (Open Elective)

Title of the Paper: Geography of India

Code:OE3.1

Number of Theory Credits	Number of lecture hours / semester
3	42
Course Outcomes:	
<ol style="list-style-type: none"> 1. This is intended to ensure the Students of other discipline to gain geographical knowledge about India. 2. Prepare them to think geographically about our nation and to enhance the pride of our Nation. 	
Course Objectives:	
<p>After the completion of this course the Students are expected to</p> <ol style="list-style-type: none"> 1. Have an understanding of the Physical, ecological, economic, demographic and cultural characteristics of our nation. 2. By that they can apply geographical knowledge and skills in deeper understanding of the Core Subjects. 	

Module	Content	Hours
Module -1	Physical Bases	12
	1.1 Location, Size and Extent, Political Divisions 1.2 Relief Features-Northern Mountains, Northern Great Plain, The Peninsular Plateau and Coastal Plain and Islands 1.3 Climate: Seasons – Summer Season, South-West Monsoon, Retreating Monsoon Season, Winter Season, 1.4 Drainage system- Rivers of North India, Rivers of South India, 1.5 Vegetation - Types and Distribution- Afforestation programs	
Module – 2	Irrigation and Agriculture	10
	2.1 Irrigation: Need for Irrigation and Types 2.2 Agriculture: Significance and Types- Intensive and Extensive Farming, Subsistence and Mixed Farming 2.3 Major Crops- Production and Distribution : Rice, Wheat Cotton , Sugar cane and Tea 2.4 Development of Agriculture- Green Revolution	
Module - 3	Minerals, Power and Industries	10
	3.1 Mineral and Power Resources-Types and Significance 3.2 Production and Distribution: Iron Ore, Manganese 3.3 Production and Distribution: Coal, Petroleum, Hydro Electricity 3.4 Major industries- Iron and Steel, Cotton textile, Sugar. 3.5 Major industrial regions of India 3.6 Special Economic Zones	
Module -4	Transport, Communication and Human Population	10
	4.1 Roadways, Railways, Airways Waterways. 4.2 Important Ports: Calcutta, Chennai, Mumbai and New Mangalore. 4.3 Indian Space Programme. 4.4 Growth of Population 4.5 Distribution and Density of Population 4.6 Population Composition – Sex Ratio, Literacy 4.7 Problems of Population	
	Total	42

References:

1. Gopal Singh : Geography of India, Atmarama and Sons, New Delhi.
2. Hussain M,2014, Geography of India, Tata McGraw-Hill Education- New Delhi
3. ICAR: Cropping pattern in India,1974.
4. Mathur,S.M.: Physical Geology of India, NBT1991.
5. Ranganath : Regional and economic Geography of India (Kan.Ver) VidyanidhiPrakashana, Gadag,2020.
6. Mallppa P : Economic Geography of India (Kan. Ver.) K V Lalitha Publishers

7. Ranjit Thirtha, 1996, Geography of India, Raniat, Jaipur.
8. Khullar D.R.2000, India a Comprehensive Geography ,Kalyani Publishers,Ludhiana.
9. Sharma T C,2012, Economic Geography of India, Rawath Publications, Delhi
10. Tiwari R.C 2006, Geography of India, Prayag Pustak Bhawan, Allahabad,
11. Pritivish Nag &Smita Sengupta, 1992, Geography of India, Concept Publishing Company, New Delhi.
12. Ranganatha, 2007, Geography of India, Vidhyanidhi Prakashan, Station Road, Gadag-01.
13. Phani Deka &Abani Bhaga bati,1992, Geography: Economic and Regional, Wiley Eastern Limited,AnsariRaod, Daryaganj, N. Delhi-01.

Websites:

1. <http://www.mapsofindia.com/geography/>
2. <https://agricoop.nic.in/en>
3. <https://www.resourcedata.org/dataset/rgi-ministry-of-minerals-energy-and-water-resources>
4. <https://dpiit.gov.in/>
5. <http://rfrfoundation.org/nadi-ko-jano/>
6. <https://jalshakti-ddws.gov.in/>

B.A. /B.Sc. Honors Programme

III Semester (Open Elective)

Title of the course: Application of GIS and Remote sensing OE.3.2 Credits: 3

Number of Theory Credits	Number of lecture hours / semester	
3	42	
Course Outcomes:		
<ol style="list-style-type: none"> 1. This is intended to ensure the Students of other discipline should understand fundamentals of remote sensing and Geographical Information system. 2. prepare them to think geographically and Apply this knowledge to their respective field of enquiry for spatial and other kinds of planning. 		
Course Objectives:		
After the completion of this course the Students are expected to <ol style="list-style-type: none"> 1. Have an understanding of the Geo-spatial tools and their significance and utilization. 2. Utilize different tools and techniques of remote sensing and GIS for addressing various problems which are both natural and societal in nature. 3. By that they can apply geographical knowledge and skills in deeper understanding of the Core Subjects. 		
Module	Content	Hours
Module - 1	Remote Sensing; Concept, Definition, Evolution of Remote Sensing, Process of Remote sensing, EMR; Wave length, Frequency, Electromagnetic Spectrum; Bands, Atmospheric window, Interaction of EMR with atmosphere and surface. Spectral signature.	12
Module - 2	Remote Sensing Platforms, Orbit, Active and Passive Remote Sensing, Indian remote sensing satellites and launch vehicle's,	10

	Application of Remote Sensing in Agriculture, Disaster management, Urban studies, Coastal management and EIA.	
Module - 3	Geographic information System; Definition, Development of GIS, Components of GIS, Data types; Spatial and Non-spatial data, Raster and Vector data models, Data Sources, errors, Data input methods; Manual and Automated.	10
Module 4	Data Analysis; Buffer Analysis and its applications, Overlay functions, Query, Network Analysis, GIS Applications in urban monitoring & planning, Disaster Mitigation, Forestry, Wetland monitoring.	10

References:

1. Lilles and Thomas M. & Kiefer Ralph: Remote Sensing and Image Interpretation Third Edition John Wiley
2. Campbell John B.: Introduction to Remote Sensing Taylor & Francis
3. Floyd F. Sabins : Remote Sensing and Principles and Image Interpretation
4. Manual of Remote Sensing: American Society of Photogrammetry and Remote Sensing.
5. George Joseph: Fundamentals of Remote Sensing; Universities Press India Pvt Ltd, Hyderabad, India
6. Editors: John D. Bossler; John R. Jensen; Robert B. McMaster; Chris Rizos, 2001. Manual of Geospatial Science and Technology, November 2001, Vol 1 Part I and II.
7. Paul M. Mather, 1999. Computer Processing of Remotely sensed Images: An Introduction. John Wiley
8. Aronoff, S. (1991). Geographic Information Systems: A Management Perspective, WDL Publications, Ottawa, Canada.
9. Chang, Kang-Tsung (2006). Introduction to geographic information systems. Boston: McGraw-Hill Higher Education.
10. Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2005). Geographic information systems and science. John Wiley & Sons.
11. Bernhardsen, T. (2002). Geographic information systems: an introduction. John Wiley & Sons.
12. Ian Heywood, Sarah Cornelius and Steve Carver (2010). An introduction to geographical information systems. Prentice Hall - Pearson Education limited.
13. Chang, Kang-tsung (2002). Introduction to Geographic Information Systems, McGraw-Hill Companies, Inc
14. Chrisman, N. (1997): Exploring Geographic Information systems, John Wiley & Sons., New York
15. The ESRI Guide to GIS Analysis, by Andy Mitchell, ESRI Press, 1999, 188 pp.

B.A./B.Sc. honors programme

Semester IV

Title of the Course: India- Resources and Sustainability

CODE: DSC 4.1

Number of Theory Credits	Number of lecture hours / semester
4	56
Course Outcomes: <ol style="list-style-type: none">1. Students will learn about the physical setting of India.2. Students will be familiarized with the water and Agricultural Resources of India and they will understand the importance of these resources in the national development and prosperity.3. The student will be able understand the factors affecting, location and distribution of Industries and different modes of Transport.	
Course Objectives: <p>This course aims to</p> <ol style="list-style-type: none">1. Understand the physical setting of India.2. Study water and agricultural resources of India.3. Study the nature of transport and communication, Industries and population growth.4. Introduce how economic, cultural, and trade activities impact on the development	
Module -1 Physical Setting:	
	14
<ol style="list-style-type: none">1.1 Location, Size and Extent. Major Physiographic Regions - Northern Mountains, Northern Great Plains, Peninsular Plateau and Coastal Plains and Islands) and their Characteristics;1.2 Climate: Seasonal Weather Characteristics, Climatic Zones. Mechanism and Characteristics of Indian Monsoons.1.3 Tropical Cyclones and Western Disturbances.1.4 Floods and Droughts1.5 Drainage System.1.6 Soil: Types, Erosion and Conservation.1.7 Vegetation: Types, Distribution, Afforestation programs, National Parks, Wildlife Sanctuaries, and Biosphere reserves.	
Module -2 Water and Agricultural Resources:	
	14
<ol style="list-style-type: none">2.1 Water resources of India, Surface and Groundwater, Water Demand and Utilization.2.2 Irrigation: Sources, Types and Intensity. Issues and Challenges: Water Resources Scarcity, Water Conservation and Management.2.3 Watershed Management, Rainwater Harvesting, Recycle and Reuse of water. Interlinking of Rivers,2.4 National Water Policies, National Water Mission, Jalashakti	

	<p>Abhiyaan. Command Area Development and Water Management. Central Water Commission and Water Tribunal and their role.</p> <p>2.5 Agriculture: Land Use and Cropping Pattern – Meaning and Concepts, Land Use and Cropping Pattern in India, Agro-climatic Regions, Green Revolution – Causes and Effects, Hunger Index and Malnutrition; Food security and right to food to achieve Zero hunger and Good Health and Wellbeing..</p>	
Module -3 Industries, Transportation and Communication:		14
	<p>3.1 Locational factors of industries, Major Industrial Regions and their characteristics,</p> <p>3.2 Classification of Industries: Agro-based, Mineral-based, Forest-based and Animal-based industries.</p> <p>3.3 Special Economic Zones: Industrial / Economic Corridor.</p> <p>3.4 Transport & Communication: Significance, Growth and Development – Road ways, Railways, Waterways, Airways and Pipeline Networks and their Complementary and Competition.</p> <p>3.5 Communication: Means of Communication and their Significance</p> <p>3.6 Assignment: Selecting a region students have to study the locational factors nearby industry and prepare a report.</p>	
Module -4 Human Resources:		14
	<p>4.1 Growth, Distribution and Density of Population.</p> <p>4.2 Composition of Population: Age, Sex, Rural-Urban Population Composition.</p> <p>4.3 Migration: Meaning, Factors, Types, Causes and Consequences.</p> <p>4.4 Human Development in India: Measures, Levels of Development based on HDI</p> <p>4.5 Field Study: Selecting a region / district students have to examine the levels of Human Development using HDI and prepare a report.</p>	

References:

1. Majid Husain (2020) Geography of India, McGraw Hill Publishers
2. R.C. Tiwari (2016) Geography of India, Provolika Publications, Allahabad
3. D.R.Khullar (2019) India: A Comprehensive Geography ,Kalyani Publishers
4. R.L.Singh (1993) India: A Regional Geography, National Geographical Society of India, New Delhi.
5. Dr Deep Shikha (2016) Geography of India - A Text Book;
6. AlkaGautam (2009) Geography of India, Sharada pustak bhawan, University Road, Allahabad – UP.
7. Sharma TC & Coutinho O (2005) : Economic and Commercial geography of India, Vikas Publishing House Ltd., New Delhi-14
8. Pritivish Nag & Smita Sengupta (1992) Geography of India, Concept Publishing Company, New Delhi.
9. Ranganath (2007) Geography of India, Vidhyanidhi Prakashan, Station Road, Gadag-01

Websites:

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2. <https://mausam.imd.gov.in/>

3. <https://tourism.gov.in/>
4. <https://www.resourcedata.org/dataset/rgi-ministry-of-minerals-energy-and-water-resources>
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B.A./B.Sc. honors Programme

Semester IV

Title of the Course: Representation of Indian Geographical features and Resources.
Code: DSC P-4.1

Number of Theory Credits	Number of lecture hours / semester
2	56
Course Outcomes:	
After the completion of this course, students should be able to	
<ol style="list-style-type: none"> 1. Understand holistically about the geography of India and plotting resources on Indian outline map. 2. Interpret and apply the concepts on resource distribution of India and related economic activities 3. Demonstrate the economic development through the connectivity of transport and communication. 	
Course Objectives:	
This course aims to	
<ol style="list-style-type: none"> 1. Understand the basics geographical setting of India 2. Study physiographic divisions with drainage, soil and vegetation of India. 3. Gets exact information regarding mechanism of monsoon and its impact. 	

Content of the Practical Course		
Ex.No.1	Mapping exercises on Indian outline Map: International Boundaries, Mountain peaks, Passes, Glaciers and important Physical Divisions of India, Rivers, National Biospheres and National Parks, Dams and Reservoirs, Lakes and Water Bodies, Islands, National Waterways, Ports and Harbours, National High ways, Important Airports, Industrial Corridors, Important Coastal Zones and Beaches, Ecologically Sensitive areas, Important industrial zones, Special Economic Zones, Resource centres and Mining, Cultural Regions, Tribal Areas. Note: Each student is expected to complete at least 3 mapping exercises from the above topics which should cover brief description on: Location (Latitude and longitude, state, district, place,) geographic/environmental/ecological/ political/ economic significance of the place/ location. Minimum 10 locations shall be involved in each exercise.	10
Ex.no.2 and 3,	Mapping Temperature and Rainfall Distribution of India / Karnataka using Isoleth method.	10
Ex.no.4 and 5	Mapping of Agro-climatic zones of India, Flood Prone and Drought Prone Areas,	8

Ex. No.6 and 7	Mapping of Cropping Pattern and Crop intensity of India/ Karnataka. Weaver's Method, Bhatia's Method. Calculation and mapping of Irrigation intensity.	10
Ex.no.8	Human Development Index: Concept, Calculation and Mapping	6
Ex.no.9	Gender Development Index: Concept, Calculation and Mapping	6
Ex.no.10	Human Poverty Index: Concept and Calculation and Mapping	6

Reference:

- 1) Hartshorne, T.A., & Alexander, J. W. (2010). Economic Geography. New Delhi: PHI Learning.
- 2) Knox, P., Agnew, J., & Mc Carthy, L. (2008). The Geography of the World Economy. London: Hodder Arnold.
- 3) Lloyd, P., & Dicken, B. (1972). Location in Space: A Theoretical Approach to Economic Geography. New York: Harper and Row.
- 4) Siddhartha, K. (2000). Economic Geography: Theories, Process and Patterns, New Delhi: Kishore Publications.
- 5) Smith, D.M. (1971). Industrial Location: An Economic Geographical Analysis, New York: John Wiley and Sons.

B.A. / B.Sc. Honors Programme
Semester IV (Open Elective)

Title of the Course : GEOGRAPHY OF KARNATAKA **Code: OE.4.1 Credits:3**

Number of Theory Credits	Number of lecture hours / semester
3	42
<p>Course Outcomes: After the completion of this course, students should be able to</p> <ol style="list-style-type: none"> 1. Understand the physical, economic and socio-demographic aspects of Karnataka state in a broader sense. 2. Understand the resource base of the state i.e., forests, soils, minerals, water and climate, and its impact on the socio-demographic and economic development of different regions of Karnataka in terms of agriculture, industries, transportation and other fields of human activities. 3. Understand the development of irrigational projects and industrial projects and special Economic zones (SEZ's) 	
<p>Course Objectives: This course aims to</p> <ol style="list-style-type: none"> 1. Understand the site and situation of Karnataka 2. Intellectual connect to the resources and economic activities of Karnataka 3. Assess demographic composition of Karnataka state 	

Module	Content	Hours
Module -1	Physical Background	12
	1.1 Location, size and Administrative divisions. 1.2 Physiographic Divisions: Coastal Regions, Malnad Regions and Maidan Regions. 1.3 Weather and Climate: Seasons, Distribution of Rainfall and Temperature, Climatic regions, Drought prone areas in Karnataka. 1.4 Drainage Systems: Major Drainage Systems in Karnataka. East flowing rivers and West flowing rivers. 1.5 Natural Vegetation: Types of vegetation, Distribution of forests in Karnataka, Protection and Conservations. Reserve Forests and Protected Forests in Karnataka, National Parks and Bird Sanctuaries in Karnataka.	
Module -2	Soil, irrigation and Agriculture:	10
	2.1 Soil: Types and Distribution, Regional Issues of Soil Quality and Management. 2.2 Water Resources: Distribution of Water Resources, Irrigation – Sources of irrigation, Multipurpose River Valley Projects. 2.3 River Water Disputes with the neighbouring states. 2.4 Agriculture regions of Karnataka. Major Food Crops – Paddy, Ragi, Maize, Pulses. 2.5 Commercial Corps – Cotton, Sugarcane, Tobacco, Coffee, Spices, 2.6 Livestock and Fishing. 2.7 Assignment: Students need to visit local fields and get to know how soil conservation plans are prepared and submit report	
Module - 3	Minerals, Energy and Manufacturing:	10
	3.1 Major Mineral resources of Karnataka and their Regionalization. Iron ore, Manganese, Gold, Bauxite 3.2 Energy Resources: Types and their Distributions. Conventional and Non-Conventional Sources. 3.3 Industries: Textile Industries, Iron and Steel Industries, Sugar Industries. Industrial Regions and Special Economic Zones of Karnataka.,	
Module – 4 Transport, Information & Communication Technology and Population		10
	4.1 Transportation: Types of Transportation, Distribution of Transportation. 4.2 Growth and Distribution of Information Technology in Karnataka. 4.3 Population Growth, Distribution and Density of Population. Population Composition – Sex Ratio, Literacy. Human Development in Karnataka (HDI)	

Reference:

1. Ranganath (2015), Geography of Karnataka, Publisher: Mysore Book House

2. S.S.Nanjannavar (2016), Geography of Karnataka, Prabhu publications
3. R. N. Tikka (2002), Physical Geography
4. Misra R.P (1969) Geography of Mysore State
5. Sarmah Dipak (2019), Forest of Karnataka-A Paronomic View, Notion Press
6. Director, Census Reports Published by Govt. of Karnataka
7. Karnataka State Gazetteer Volume- I & II

Websites:

1. <https://ksrsac.karnataka.gov.in/>
2. <https://ksdma.karnataka.gov.in/english>
3. <https://raitamitra.karnataka.gov.in/english>
4. <https://www.karnatakaturism.org/tourism-department/>

BA/BSc Honors Programme
Semester IV (Open Elective)

Title of the course: Population and Settlement Geography

Code: OE.4.2 Credits: 3

Number of Theory Credits	Number of lecture hours / semester	
3	42	
<p>Course Outcomes: After the completion of this course, students should be able to</p> <ol style="list-style-type: none"> 1. Understand the concepts of both Population and Settlement geography. 2. Appreciate the man environment interplay which are expressed in different kinds and patterns in the distribution and density of population and Human settlements over space. 3. Understand the Demographic dynamics like birth, Death and Migration of Population and its relation with settlement dynamics like settlement size, types and rural urban settlements and its issues. 		
<p>Course Objectives: This course aims to</p> <ol style="list-style-type: none"> 1. Introduce the basic concepts of Population Geography to the students. 2. Introduce the basic concepts of Settlement Geography to the students. 3. Bring the significance of Environment and society on Population dynamics and Mobility. 4. Critically examine the nature of man-environment relation and interaction with reference to human settlement types and patterns. 		
Module	Content	Hours
Module -1	Population Geography -	12
	<ol style="list-style-type: none"> 1.1 Meaning, Definitions, Scope and nature of population geography 1.2 Global Population size and growth, Malthus Theory, Demographic Transition Theory 1.3 Over, Under and Optimum Population 1.4 Population Policies in the world – Social Well being, Quality of Life 	

Module -2	Population Dynamics	10
	2.1 Fertility – Measures and Distribution 2.2 Mortality – Measures and Distribution 2.3 Migration – Types, Causes and Consequences	
Module -3	Settlement Geography	10
	3.1 Meaning, Definitions, nature and importance of settlement geography, 3.2 Origin of settlement, influencing factors 3.3 Site and situation of settlement – Stable and Unstable settlement	
Module -4	Classification of Settlements- Rural and Urban Settlements	10
	4.1. Rural Settlement – Types, Pattern, Functions 4.2. Rural-Urban Continuum and Fringe 4.3. Urban Settlement - Definition of urban place, Hierarchy, 4.4. Functional classification of towns, Concept of Urban morphology. 4.5. Primate City, Rank Size Rule	

References:

1. Alan Bowman and Andrew Wilson (2011), Settlement, Urbanization, and Population, Oxford University Press, UK.
2. Chandna R.C (2011), Geography of Population, Kalyani publishers, Bangalore.
3. Izzi Howell (2019), Population and Settlement Geography (Geographics), Franklin Watts, UK.
4. John Pallister (2004), GCSE Geography: Human - Population and Settlement, Hodder Education Group, UK.
5. Majid Husain (2011) Human Geography, Rawat Publication, Jaipur.
6. Prithvish Nag, Debnath (2021), Population Geography, BharatiPrakashan, Bangalore.
7. Rama Yagya Singh (1994), Geography of Settlement, Rawat Publications, Jaipur
8. Sumita Ghosh (1998), Introduction to Settlement Geography, Orient Longman, Hyderabad.

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸ್ಥಾಪನೆ : 1916

ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಕಾರ್ಯಸೌಧ
ಕ್ರಾಫರ್ಡ್ ಭವನ, ಮೈಸೂರು-570005

ದಿನಾಂಕ : 29-12-2022

ಸಂಖ್ಯೆ:ಎಸಿ.6/152/2020-21

ಅಧಿಸೂಚನೆ

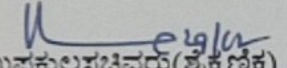
ವಿಷಯ:- SEC-India and Indian Constitution ಪತ್ರಿಕೆಯ ಪಠ್ಯಕ್ರಮದ ಬಗ್ಗೆ.
ಉಲ್ಲೇಖ:- ಈ ಕಛೇರಿ ಅಧಿಸೂಚನೆ ಸಂಖ್ಯೆ: ಎಸಿ2(ಎಸ್)/151/2020-21 ದಿನಾಂಕ 09-12-2022

* * * * *

ಕರ್ನಾಟಕ ಸರ್ಕಾರ ಉನ್ನತ ಶಿಕ್ಷಣ ಪರಿಷತ್, ಬೆಂಗಳೂರು ಇವರು ಸ್ನಾತಕ ಪದವಿ ಕೋರ್ಸಿನ 3 ಮತ್ತು 4 ನೇ ಸೆಮಿಸ್ಟರ್‌ನ ವಿದ್ಯಾರ್ಥಿಗಳಿಗಾಗಿ SEC ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಒಂದಾದ India and Indian Constitution ಪತ್ರಿಕೆಯ (ಮೂರು ಕ್ರೆಡಿಟ್‌ಗಳಿಗೆ) ಪಠ್ಯಕ್ರಮವನ್ನು ವಿಶ್ವವಿದ್ಯಾನಿಲಯಕ್ಕೆ ಶಿಫಾರಸ್ಸು ಮಾಡಿ ಕಳುಹಿಸಿರುತ್ತಾರೆ.

ಉಲ್ಲೇಖ (1)ರ ಅಧಿಸೂಚನೆಯಲ್ಲಿರುವ Model Programme Structure ನಲ್ಲಿರುವಂತೆ, ವಿದ್ಯಾರ್ಥಿಗಳು ಅಭ್ಯಸಿಸಬೇಕಿರುವುದರಿಂದ, ನಿಕಾಯ ಮತ್ತು ಶೈಕ್ಷಣಿಕ ಮಂಡಳಿಯ ಅನುಮೋದನೆಯನ್ನು ಕಾಯ್ದಿರಿಸಿ, ಮಾನ್ಯ ಕುಲಪತಿಗಳ ಅನುಮೋದನೆಯ ಮೇರೆಗೆ ಈ ಅಧಿಸೂಚನೆ ಹೊರಡಿಸಿದೆ.

SEC- India and Indian Constitution ಸ್ನಾತಕ ಪದವಿಯ ಪಠ್ಯಕ್ರಮ ಮತ್ತು ಪರೀಕ್ಷಾ ವಿಧಾನಗಳನ್ನು www.uni-mysore.ac.in ಇಲ್ಲಿ ಅಳವಡಿಸಿದ್ದು, ಸಂಬಂಧಪಟ್ಟವರು ಇಲ್ಲಿಂದ ಪಡೆಯಬಹುದಾಗಿದೆ.


ಉಪಕುಲಸಚಿವರು(ಶೈಕ್ಷಣಿಕ)
ಉಪ ಕುಲಸಚಿವರು. (ಶೈಕ್ಷಣಿಕ)
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
M/ಮೈಸೂರು-೫೭೦ ೦೦೫

ಗೆ:-

1. ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಎಲ್ಲಾ ಘಟಕ/ಸಂಯೋಜಿತ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳಿಗೆ,
2. ಕುಲಸಚಿವರು (ಪರೀಕ್ಷಾಂಗ), ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.
3. ನಿರ್ದೇಶಕರು, ಕಾಲೇಜು ಅಭಿವೃದ್ಧಿ ಮಂಡಳಿ, ಮೌಲ್ಯಭವನ ಕಟ್ಟಡ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು.
4. ನಿರ್ದೇಶಕರು. ಐ.ಸಿ.ಡಿ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು- ಇವರಿಗೆ ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ವೆಬ್‌ಸೈಟ್‌ನಲ್ಲಿ ಪ್ರಕಟಿಸಲು ಕೋರಲಾಗಿದೆ.
5. ಕುಲಪತಿಗಳು/ವಿಶೇಷ ಅಧಿಕಾರಿಗಳು/ ಆಪ್ತ ಸಹಾಯಕರು/ಕುಲಸಚಿವರು/ ಉಪಕುಲಸಚಿವರು/ ಸಹಾಯಕ ಕುಲಸಚಿವರು/ಅಧೀಕ್ಷಕರು, ಆಡಳಿತ ವಿಭಾಗ/ಸಾಮಾನ್ಯ/ಬಿಡಿಐ/ ಪ್ರಾಧಿಕಾರ ಮತ್ತು ಪರೀಕ್ಷಾ ವಿಭಾಗ, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.
6. ಕಾರ್ಯನಿರ್ವಾಹಕರು, ಆಡಳಿತಶಾಖೆಯ, AC2(S)/ AC-3/ AC-7(a)/ AC-9, ಶೈಕ್ಷಣಿಕ ವಿಭಾಗ, ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.- ಈ ಸಂಬಂಧ ಮುಂದಿನ ಕ್ರಮವಹಿಸುವಂತೆ ತಿಳಿಸಲಾಗಿದೆ.
7. ರಕ್ಷಾ ಕಡತಕ್ಕೆ.

SVN

Syllabus

(III & IV Semester)

INDIA AND INDIAN CONSTITUTION

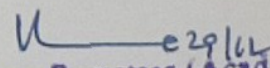
(Revised on November 23, 2022)

Submitted to

**Principal Secretary to the Govt.
Higher Education Department,
Bengaluru**

Submitted by

**Chairman and Members
NEP-2020 Committee for Curriculum Framing in Political Science and Public
Administration**


Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

INDIA AND INDIAN CONSTITUTION

Ability Enhancement Compulsory Courses (AECC)	
Course Title: INDIA AND INDIAN CONSTITUTION	
Total Contact Hours: 45	Course Credits: 3
No. of Teaching Hours/Week: 3	Duration of ESA/Exam: 2 Hours
Formative Assessment Marks: 40	Summative Assessment Marks: 60+40=100

Course Objective

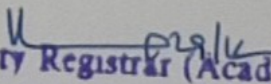
The purpose of the course is to help students to learn and explain the journey of India as a republic. They will, through this paper learn to contextualise the depth of India as a nation with its diverse socio-political culture, its philosophical traditions, values and Ideals. It will give them knowledge to expound the breadth of freedom struggle in various parts of India, its significance in nation building and the sacrifices made both by its leaders and followers. It will help them to demonstrate their knowledge regarding the efforts made at working towards a constitution as India's conscience cherishing the values of Justice, Liberty, Equality and Fraternity. Consequently it will enable students to contextualise the powers and functions of various offices under the Constitution. It will help them determine the role and responsibilities of citizens as enshrined in the Constitution, offering insights in to the contributions of personalities like Gandhiji, Dr B.R.Ambedkar and Jawahar Lal Nehru, Bal Gangadhar Tilak, the values tolerance, equality of treatment, scientific secularism and swarajya and the processes of policymaking keeping national wellbeing in the forefront. This paper will enable students to illustrate how vibrant our Constitution is, how farsighted were its makers and how efficient are the various institutions that are functioning under it.

Learning outcomes

Upon completion of this course students will be able to—

- Explain the philosophy and the structure of the Constitution.
- Measure the powers, functions and limitations of various offices under the Constitution.
- Demonstrate the values, ideals and the role of Constitution in a democratic India.

Unit	Contents of Course:	45 Hours
Unit-I	<p>Background to the study of Indian Constitution**</p> <p>Chapter 1: Philosophical and Political foundations of India: Dharma and Danda, Buddhist, liberal (Raja Rammohun Roy) and Subaltern (Ranajit Guha)* Colonial impact on Indian society,** Nationalist perspective (Swamy Vivekananda and Sri Aurobindo).</p> <p>Chapter 2: Political values and Ideals during freedom struggle: Non Violence, Tolerance, Satyagraha and Swadeshi (Gandhi), Swarajya (Tilak), Integral Humanism (Deen Dayal Upadhyay) and Voluntarism (Vinoba Bhave).</p> <p>Chapter 3: Political Contribution of Regional freedom struggle: Kittur Rani Chennamma, Hardekar Manjappa, Madikeri Peasants, Halagali Bedas.</p>	<p>6 Hours</p> <p>5 Hours</p> <p>4 Hours</p>
Unit-II	<p>Constitutional Development and its Philosophy</p> <p>Chapter- 4: Historical background of Constitutional development in India - Developments between 1857 to 1952 (only Acts during this period must be taught), Composition and debates of Constituent Assembly (in brief), working of committees.</p> <p>Chapter 5: Philosophy and features of Indian Constitution - Preamble*, Salient features**, Constitutionalism, Dr B.R. Ambedkar and Nehru's contribution in the making of the Constitution.</p> <p>Chapter- 6: Working of the Constitution - Fundamental Rights, Union-State and Inter-State Relations (Art. 263, Inter-State disputes and trade and commerce), important Amendments to the Constitution**, Parliamentary Committees* (Standing, Ad hoc and Departmental).</p>	<p>5 Hours</p> <p>5 Hours</p> <p>5 Hours</p>


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Unit-III	<p>Constitutional Institutions and Citizen's role</p> <p>Chapter 7: Parliamentary and Constitutional Institutions: Legislature* (Upper and Lower house), Executive (composition and powers), Judiciary (High Court and Supreme Court, its composition and jurisdiction), Comptroller and Auditor General, Inter-State Council, Election Commission.</p> <p>Chapter 8: Role and Responsibilities of Citizens under Indian Constitution: Concept of Citizenship, Citizenship Amendment Act, Fundamental Duties, Right to Information Act, Civil Society.*</p> <p>Chapter 9: Goals and Policies of National Development enshrined in the Constitution: Concept of National Development, Unity and Integrity of the nation, Goals of Educational Policies*, Role of teachers and students in Nation Building**.</p>	<p>6 Hours</p> <p>4 Hours</p> <p>5 Hours</p>
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(**Note-This is a compulsory, foundational and value additional course to be taught to students at the graduate level under NEP 2020. The paper is expected to impart the structure and functional aspects of constitution while giving them the background of a diverse country like India and the nuances of its social fabric and the why of such an elaborate constitution. The introductory chapter therefore is designed to familiarise students about their country and culture before they understand their constitution).

(Please note: The question paper pattern is indicative of the way a teacher needs to teach this paper. The pedagogical choice of a teacher helps to make an impact of his/her teaching on the student. Activity based and experiential teaching methods help student centric learning process - these are tips to make this paper more meaningful- the ultimate choice is left to the teacher)

Exercise:

- Department can debate on the role of Constitution in the development of India.
- Students can empirically evidence the effectiveness of concepts like –Freedom, Equality, Justice, Rights and Duties by conducting empirical studies.
- Can invite experts to deliver special lectures on various provisions and amendments of the Constitution like the functioning of Election Commission, Article 246, 356 etc.

Important Notes:

Chapter 1:

* These are introductory courses. Teachers should give a brief introduction to these for a better understanding of the philosophical and political foundations of Indian society taking suggested thinkers as examples (Max 2hrs).

** Here teachers should briefly teach about the contributions and impact of British and Arabs as invaders, Mughals as settlers (Max 2hrs).

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Chapter 2:

* These are to be taught briefly as concepts against the backdrop of freedom struggle

Chapter 3:

* BOS can alter this chapter to bring in the personalities and movements in their region who have made an impact on freedom struggle.

Chapter 5:

*While teaching the preamble please cover secularism and its criticism keeping in mind the neutrality of state in matters of religion and bring in the discussion regarding the differences in the usage of the terms like Religion, Dharma, Pantha (ಪಂಥ), Matha (ಮಠ), Caste, Jatyathithate and the meaning of scientific secularism as expounded by Nehru.

** In the salient features the teachers must teach at least 10 features of the constitution like Written constitution, Parliamentary form of government, Quasi federalism, Directive Principles of State Policy, Amendment procedure, Universal adult franchise, Integrated citizenship, Independent judiciary, Judicial Review, Emergency provisions and Three tier system of governance etc. The BOS has the discretion in selecting the salient features.

Chapter 6:

*In the committees they should teach the nature of these committees, their types, categories and sub categories.

** In this the teacher should teach the amendments like 42nd, 73rd, 74th, 101st, etc which have major impact on the working of the Constitution. The BOS has the discretion in selecting the amendments but must ensure that they have a bearing on the working of the constitution.

Chapter 7:

* Here teachers are expected to teach the institutions in general and contextualise them to state and central governments.

Chapter 8:

*In this the teacher should discuss issues like paying taxes, exercising vote, discouraging corruption, Knowledge of laws that govern them.

Chapter 9:

*Teachers can touch upon Kothari Commission, NEP (1986 and 2020 while teaching Educational Policies)

**Teachers can touch upon the teacher taught relations (vedantic tradition), teacher as a role model, student as future citizen, the need for ethical and moral responsibility among them etc.,

Suggested Readings:

1. Aiyangar K.R. 1941. "Ancient Indian Polity". Oriental Bokks Agency. Poona.

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3. Andre Beteille, 1965. Caste, class, and Power. Berkley: University of California Press.
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21. Kapoor, Kapil(Ed), 2005, Indian Knowledge System-Vol-1, New Delhi: D>K Printworld LTD.

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27. P.M Bakshi, Constitution of India, Universal Law Publishing House, New Delhi, 1999.
28. Patham and Thomas Patham. 1986. "Political Thought in Modern India." Sage Publications, United State.
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30. Rghavendra Rao, K. 2000. *Imagining Unimaginable Communities*. Hampi: Prasangha, Kannada University.
31. Bhargava, Rajeev. ed. 1998. *Secularism and Its Critics*, New Delhi: Oxford University Press.
32. S. N. Jha, Indian Political System,: Historical Developments, Ganga Kaveri Publishing House, Varanasi, 2005.
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ಏಕಾತ್ಮಮಾನವತೆ" ರಾಷ್ಟ್ರೋತ್ಥಾನಸಾಹಿತ್ಯ, ಬೆಂಗಳೂರು.
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ಅಭಿನವಪ್ರಕಾಶನ.


Pedagogy:

The course shall be taught through Lectures, Tutorials, demonstrations, discussions on court judgments, Self-guided Learning Materials, Open Educational Recourses (OER) as reference materials. Field work Exercises to understand the concepts in practice, Assignments, Seminars, Group Discussions, open house debates and Week-end Counseling could also help in better and informed learning in these classes.

Formative Assessment	
Assessment Occasion/ type	Weightage in Marks
Assessment Test-1	10
Seminar/Presentation/Group Discussion	10
Assessment Test-2	10
Assignment	10
Total	40

Sd/-

Subject Committee Chairperson


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I. Term End Examination for India and Indian Constitution(II)

Paper will be for maximum of 60 marks. The minimum marks to pass the examination is 40% (24 marks).

Note: Duration of Examination for India and Indian Constitution (II) is 2 hours.

Question paper pattern for India and Indian Constitution --

- Section A: Multiple Choice Questions
- Section B: Short Answer Questions
- Section C: Medium Answer Questions
- Section D: Long Answer Questions

Section A: Multiple Choice Questions

All Questions are Compulsory (10x1=10)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Section B: Short Answer Questions (5x5=25)

Answer any Five questions. Answer the following questions in not more than 5-5 sentences.

- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.

Section C: Medium Answer Questions (1x10=10)

Answer any One question. Answer the following question in not more than 500 words

18.

19.

Section D: Long Answer Questions (1x15=15)

Answer any One question. Answer the following question in not more than 800 words

20.

21.

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ಫ್ಯಾಕ್ಸ್: 0821-2419363/2419301

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www.uni-mysore.ac.in

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸ್ಥಾಪನೆ : 1916

ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಕಾರ್ಯಸೌಧ
ಕ್ರಾಫರ್ಡ್ ಭವನ, ಮೈಸೂರು-570005
ದಿನಾಂಕ: 10-10-2022

ಸಂಖ್ಯೆ:ಎಸಿ.6/152/NEP/2020-21

ಅಧಿಸೂಚನೆ

ವಿಷಯ:- NEP-2020 ಅನುಸಾರ 2022-23ನೇ ಶೈಕ್ಷಣಿಕ ಸಾಲಿಗೆ 3 & 4 ನೇ ಸೆಮಿಸ್ಟರ್ ಬಿಎ-
ಕನ್ನಡ ಅಧ್ಯಯನ ಪಠ್ಯಕ್ರಮವನ್ನು ಜಾರಿಗೆ ತರುವ ಬಗ್ಗೆ.

- ಉಲ್ಲೇಖ:- 1. ದಿನಾಂಕ: 23-08-2022 ರಂದು ಜರುಗಿದ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಸಭೆಯ
ಶಿಫಾರಸ್ಸು.
2. ದಿನಾಂಕ: 08-09-2022 ರಂದು ಜರುಗಿದ ಕಲಾ ನಿಕಾಯ ಸಭೆಯ ಶಿಫಾರಸ್ಸು.
3. ದಿನಾಂಕ: 23-09-2022 ರಂದು ಜರುಗಿದ ಶಿಕ್ಷಣ ಮಂಡಳಿಯ ನಡಾವಳಿ.

ದಿನಾಂಕ: 23-08-2022 ರಂದು ಜರುಗಿದ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿಯು (ಸ್ನಾತಕ) ಬಿ.ಎ. ಕನ್ನಡ
ಅಧ್ಯಯನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ 3 ಮತ್ತು 4 ನೇ ಸೆಮಿಸ್ಟರ್‌ಗಳ ಪಠ್ಯಕ್ರಮಗಳನ್ನು NEP-2020 ಅನುಸಾರ
ಸಿದ್ಧಪಡಿಸಿ, ಜಾರಿಗೊಳಿಸಲು ಶಿಫಾರಸ್ಸು ಮಾಡಿರುತ್ತಾರೆ.

ಉಲ್ಲೇಖಿತ (2 & 3) ರಂತೆ ದಿನಾಂಕ 08-09-2022 ಮತ್ತು 23-09-2022 ರಂದು ಕ್ರಮವಾಗಿ ನಡೆದ
ಕಲಾ ನಿಕಾಯ ಹಾಗೂ ವಿದ್ಯಾ ವಿಷಯಕ ಪರಿಷತ್ ಸಭೆಗಳಲ್ಲಿ ಮೇಲಿನ ಪ್ರಸ್ತಾವನೆಗಳನ್ನು
ಅನುಮೋದಿಸಿರುವುದರಿಂದ ಈ ಅಧಿಸೂಚನೆ ಪ್ರಕಟಿಸಲಾಗಿದೆ.

ಕನ್ನಡ ಅಧ್ಯಯನ (ಸ್ನಾತಕ) ವಿಷಯದ ಪಠ್ಯಕ್ರಮಗಳನ್ನು www.uni-mysore.ac.in ನಿಂದ
ಪಡೆಯಬಹುದಾಗಿದೆ.

ಕುಲಸಚಿವರಿಂದ ಕರಡು ಅನುಮೋದಿಸಲ್ಪಟ್ಟಿದೆ.

ಉಪಕುಲಸಚಿವರು (ಶೈಕ್ಷಣಿಕ)
ಕುಲಸಚಿವರು, (ಶೈಕ್ಷಣಿಕ)
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಮೈಸೂರು-570 002

ಗೆ:-

1. ವಿಶ್ವವಿದ್ಯಾನಿಲಯಕ್ಕೆ ಸಂಯೋಜನೆಗೊಳಪಟ್ಟ ಎಲ್ಲಾ ಸ್ನಾತಕ ಕಾಲೇಜುಗಳ ಪ್ರಾಂಶುಪಾಲರುಗಳಿಗೆ- ಅಗತ್ಯ
ಕ್ರಮಕ್ಕಾಗಿ
2. ಕುಲಸಚಿವರು (ಪರೀಕ್ಷಾಂಗ), ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು.
3. ಡೀನರು, ಕಲಾ ನಿಕಾಯ, ರಾಜ್ಯಶಾಸ್ತ್ರ ಅಧ್ಯಯನ ವಿಭಾಗ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು.
4. ಅಧ್ಯಕ್ಷರು/ನಿರ್ದೇಶಕರು, ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆ/ಮಂಡಳಿ, ಮಾನಸಗಂಗೋತ್ರಿ, ಮೈಸೂರು.

ಸ್ನಾತಕ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಸಭೆ

ಕುಲಸಚಿವರ ಪತ್ರ ಸಂಖ್ಯೆ : ಯುಎ-2/379/2016-17 ದಿನಾಂಕ 17-05-2022ರ ಅನ್ವಯ
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮಾನಸಗಂಗೋತ್ರಿಯ ಕುವೆಂಪು ಕನ್ನಡ ಅಧ್ಯಯನ ಸಂಸ್ಥೆಯಲ್ಲಿ ದಿನಾಂಕ :
23-08-2022ರ ಮಂಗಳವಾರ ಬೆಳಿಗ್ಗೆ 11.30ಗಂಟೆಗೆ ಮೇಲ್ಮಹಡಿಯ ಕೊಠಡಿ ಸಂಖ್ಯೆ 207ರಲ್ಲಿ ಸ್ನಾತಕ
ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಸಭೆಯನ್ನು ನಡೆಸಲಾಯಿತು.

ಸಭೆಯಲ್ಲಿ ಹಾಜರಿದ್ದವರು :

ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್	ಅಧ್ಯಕ್ಷರು
ಡಾ. ವಿಶ್ವನಾಥ	ಸದಸ್ಯರು
ಡಾ. ತಿಮ್ಮಯ್ಯ ಕೆ	ಸದಸ್ಯರು
ಡಾ. ಕೃಷ್ಣಮೂರ್ತಿ	ಸದಸ್ಯರು
ಡಾ. ವಿಜಯಲಕ್ಷ್ಮಿ	ಸದಸ್ಯರು
ಡಾ. ಶಿವಸ್ವಾಮಿ	ಸದಸ್ಯರು
ಡಾ. ರಾಮಕೃಷ್ಣ ಎಂ	ಸದಸ್ಯರು
ಡಾ. ಬೆಟ್ಟೇಗೌಡ ಪಿ	ವಿಶೇಷ ಆಹ್ವಾನಿತರು
ಡಾ. ಹೆಚ್ ಪಿ ಗೀತಾ	ವಿಶೇಷ ಆಹ್ವಾನಿತರು

ಗೈರು ಹಾಜರಾದವರು :

ಡಾ. ಕವಿತಾ ಕೆ ಜಿ	ಸದಸ್ಯರು
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ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಸಭೆಯ ನಡವಳಿ

ದಿನಾಂಕ 23-08-2022ರಂದು ನಡೆದ ರಾಷ್ಟ್ರೀಯ ಶಿಕ್ಷಣ ನೀತಿ ಅನ್ವಯ ಸಭೆ ಜರುಗಿತು. ಆರಂಭದಲ್ಲಿ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಅಧ್ಯಕ್ಷರಾದ ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್. ಕರಿಕಲ್ ಅವರು ಸಭೆಯ ಸದಸ್ಯರನ್ನು ಸ್ವಾಗತಿಸಿದರು. ನಂತರ ಕಾರ್ಯಸೂಚಿಯನ್ನು ಕೈಗೆತ್ತಿಕೊಳ್ಳಲಾಯಿತು.

ನಿರ್ಣಯಗಳು :

1. ಕರ್ನಾಟಕ ರಾಜ್ಯ ಉನ್ನತ ಶಿಕ್ಷಣ ಪರಿಷತ್‌ನ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಸಮಿತಿಯು ನೀಡಿರುವ ಕನ್ನಡ ಪಠ್ಯಕ್ರಮ NEP ಪ್ರಕಾರದ ರೂಪುರೇಷೆಯನ್ನು ಅನುಸರಿಸಿ ಪದವಿ ಮಟ್ಟದ ಮೂರು ಮತ್ತು ನಾಲ್ಕನೇ ಸೆಮೆಸ್ಟರ್ ಪಠ್ಯಪುಸ್ತಕಗಳ ರೂಪುರೇಷೆಯನ್ನು ಸಿದ್ಧಪಡಿಸಿದೆ.
2. ಅದರೊಂದಿಗೆ ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಸ್ನಾತಕ ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ ಮೊದಲ ಸಭೆಯಲ್ಲಿ ತೀರ್ಮಾನಿಸಿದಂತೆ ಭಾಷಾ ಪಠ್ಯಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡಿದೆ.
3. ಮೂರನೇ ಸೆಮೆಸ್ಟರ್ ಭಾಷಾ ಪಠ್ಯದಲ್ಲಿ ನಡುಗನ್ನಡದ ಪರಿಚಯ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಮಾಡಿಕೊಡುವ ದೃಷ್ಟಿಯಿಂದ ಸಂಕೀರ್ಣ ಭಾಗದಲ್ಲಿ ನಡುಗನ್ನಡ ಸಾಹಿತ್ಯಕ್ಕೆ ಅವಕಾಶ ಕಲ್ಪಿಸಿದೆ.
4. ಅದರಂತೆಯೇ ನಾಲ್ಕನೇ ಸೆಮೆಸ್ಟರ್ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯದ ಸಂಕೀರ್ಣ ವಿಭಾಗದಲ್ಲಿ ಹಳಗನ್ನಡ ಭಾಷಾ ಪಠ್ಯಗಳನ್ನು ಆಯ್ಕೆ ಮಾಡಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಹಳಗನ್ನಡ ಪರಿಚಯಿಸುವ ಅವಕಾಶ ಮಾಡಿಕೊಳ್ಳಲಾಗಿದೆ.
5. ಮೂರನೇ ಮತ್ತು ನಾಲ್ಕನೇ ಸೆಮೆಸ್ಟರಿನ ಕನ್ನಡ (ಮೇಜರ್) ಐಚ್ಛಿಕ ವಿಷಯದ ಪಠ್ಯಗಳಿಗೆ ಸಂಪೂರ್ಣ ಕರ್ನಾಟಕ ರಾಜ್ಯ ಉನ್ನತ ಶಿಕ್ಷಣ ಪರಿಷತ್ ಪಠ್ಯಕ್ರಮ ರಚನಾ ಸಮಿತಿಯು ನೀಡಿರುವ ಪಠ್ಯಕ್ರಮವನ್ನು ಅನುಸರಿಸಲಾಗಿದೆ.

ವಿಷಯ:

ಪದವಿ ವಿದ್ಯಾರ್ಥಿಗಳಾದ ಕಲಾನಿಕಾಯದವರಿಗೆ ಮುಕ್ತ ಐಚ್ಛಿಕ (Open Elective) ಪತ್ರಿಕೆ ತೆಗೆದುಕೊಳ್ಳುವಾಗ ಹೆಚ್ಚು ಆಯ್ಕೆಗಳಿಲ್ಲ ಒಂದೋ ಅವರು ವಾಣಿಜ್ಯ ವಿಷಯವನ್ನು ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಬೇಕು ಇಲ್ಲವೆ ವಿಜ್ಞಾನ ವಿಷಯವನ್ನು ಆಯ್ಕೆ ಮಾಡಿಕೊಳ್ಳಬೇಕು. ಇದರಿಂದ ವಿದ್ಯಾರ್ಥಿಗಳು ಬಹಳ ತೊಂದರೆಯನ್ನು ಎದುರಿಸುತ್ತಿದ್ದಾರೆ. ಆದ್ದರಿಂದ ಕಲಾ ನಿಕಾಯವನ್ನು ಬೇರೆ ಬೇರೆ ರೀತಿಯಲ್ಲಿ ವಿಂಗಡಿಸಿ ಅದರಲ್ಲಿ ಒಂದನ್ನು ತೆಗೆದುಕೊಳ್ಳಲು ಅವರಿಗೆ ಅವಕಾಶ ಮಾಡಿ ಕೊಡಬಹುದಾಗಿದೆ.

ಅ) ಭಾಷೆ ಮತ್ತು ಸಾಹಿತ್ಯ : ಕನ್ನಡ, ಇಂಗ್ಲೀಷ್, ಹಿಂದಿ, ತಮಿಳು, ತೆಲುಗು, ಸಂಸ್ಕೃತ ಇತ್ಯಾದಿ.

ಆ) ಧರ್ಮ ಮತ್ತು ತತ್ವಶಾಸ್ತ್ರ : ಜೈನಾಲಜಿ, ಕ್ರಿಶ್ಚಿಯಾನಿಟಿ, ಅಂಬೇಡ್ಕರ್ ಸ್ಟಡೀಸ್, ಗಾಂಧೀಯನ್ ಸ್ಟಡೀಸ್, ಬಾಬು ಜಗಜೀವನ್ ರಾಮ್, ಬುದ್ಧ ಸ್ಟಡೀಸ್, ಇತ್ಯಾದಿ.

ಇ) ಪ್ರದರ್ಶಕ ಕಲೆಗಳು: ಸಂಗೀತ, ನೃತ್ಯ, ರಂಗಭೂಮಿ, ನಾಟಕಕಲೆ, ಅಭಿನಯ, ಇತ್ಯಾದಿ.

ಈ) ಸಮಾಜ ವಿಜ್ಞಾನ ಶಿಸ್ತುಗಳು: ರಾಜ್ಯಶಾಸ್ತ್ರ, ಸಮಾಜಶಾಸ್ತ್ರ, ಅರ್ಥಶಾಸ್ತ್ರ, ಇತ್ಯಾದಿ.

ಈ ರೀತಿಯಲ್ಲಿ ವಿಭಾಗಿಸಿ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಅನುಕೂಲ ಮಾಡಿಕೊಡಬೇಕಾಗಿ ವಿಶ್ವವಿದ್ಯಾನಿಲಯಕ್ಕೆ ಮನವಿ ಮಾಡಿಕೊಳ್ಳಲು, ಅಧ್ಯಯನ ಮಂಡಳಿ ತೀರ್ಮಾನಿಸಿತು.

ಈ ಎಲ್ಲಾ ವಿಷಯಗಳನ್ನು ಚರ್ಚಿಸಿ ಸಭೆಯು ಮೇಲಿನಂತೆ ತೀರ್ಮಾನಗಳನ್ನು ತೆಗೆದುಕೊಂಡಿತು. ಕೊನೆಯಲ್ಲಿ ಅಧ್ಯಕ್ಷರ ವಂದನಾರ್ಪಣೆಯೊಂದಿಗೆ ಸಭೆ ಮುಕ್ತಾಯವಾಯಿತು.

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಕಲಾ ಗಂಗೋತ್ರಿ - 03
ತೃತೀಯ ಚತುರ್ಮಾಸ, ಬಿ.ಎ. ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಪುಸ್ತಕ
(ಎನ್.ಇ.ಪಿ - 2020ಪಠ್ಯಕ್ರಮ)

ಪರಿವಿಡಿ

ಘಟಕ - 1 ರಾಷ್ಟ್ರೀಯತೆ

1. ಅ) ಭಾರತೀಯರು ನಾವು -ಆನಂದಕಂದ
ಆ) ವಿಶ್ವಭಾರತಿಗೆ ಕನ್ನಡದಾರತಿ -ಚೆನ್ನವೀರ ಕಣವಿ
2. ಆಗಸ್ಟ್ ಕ್ರಾಂತಿ -ಸಿಕಂದರ್ ಕಾಪು
3. ಈಗ ಎಂಥ ರಾಷ್ಟ್ರೀಯತೆ ಬೇಕು? -ವಸಂತ್ ಶೆಟ್ಟಿ

ಘಟಕ - 2 ಕೃಷಿ

1. ಅ) ಉಳುವ ಒಕ್ಕಲು ಮಗನ ತಪ್ಪು ನೋಡದೆ ಒಪ್ಪುಗೊಳ್ಳಯ್ಯ -ಆನಂದಕಂದ
ಆ) ಏಳುತಲೆ ಎದ್ದು ಯಾರ್ಯಾರ ನೆನೆಯಲಿ -ಗರತಿಯ ಹಾಡು ಸಂಗ್ರಹದಿಂದ
2. 'ಅವರ ಪೈಕಿ ನಾನೂ ಒಬ್ಬ' -ಸಿಕಂದರ್ ಕಾಪು
3. ಧನ್ಯಂತರಿ ಚಿಕಿತ್ಸೆ -ಕುವೆಂಪು

ಘಟಕ - 3 ಕ್ರೀಡೆ

1. ಅ) ನೆತ್ತಮನಾಡಿ ಭಾನುಮತಿ ಸೋಲೊಡೆ -ಪಂಪ
ಆ) ಕವಡೆಯಾಟ -ಪ್ರತಿಭಾ ನಂದಕುಮಾರ್
2. ಮೇರಿ ಕೋಮ್ ಸಂತತಿ ಸಾವಿರವಾಗಲಿ -ಗಿರಿಜಾ ಶಾಸ್ತ್ರಿ
3. ಆಯ್ದು ಲೇಖನ -ಪಿ. ಲಂಕೇಶ್

ಘಟಕ - 4 ಸಂಕೀರ್ಣ

1. ಅ) ಬೆಟ್ಟದ ಮೇಲೊಂದು ಮನೆಯ ಮಾಡಿ -ಅಕ್ಕಮಹಾದೇವಿ
ಆ) ತರವೆ ಬಿಡು ಪರಹಿಂಸೆ ದೋಷವು -ಕನಕದಾಸರು
2. ಕಣ್ಣಾಚೆಗೆ -ಕಾಳೇಗೌಡ ನಾಗವಾರ
3. ಕಂಗಾಲಾಗಿ ಕುಳಿತು -ಎಸ್. ತುಕಾರಾಂ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಡಾ. ಮ. ರಾಮಕೃಷ್ಣ

ಸಹಸಂಪಾದಕರು

ಡಾ. ಡಿ. ವಿಜಯಲಕ್ಷ್ಮಿ

ಡಾ. ಪಿ. ಬೆಟ್ಟೇಗೌಡ

ಡಾ. ಚಿಕ್ಕಮಗಳೂರು ಗಣೇಶ

ಡಾ. ಭಾರತೀದೇವಿ ಪಿ

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ

ಕಲಾ ಗಂಗೋತ್ರಿ - 04

ಚತುರ್ಥ ಚತುರ್ಮಾಸ, ಬಿ.ಎ. ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಪುಸ್ತಕ

(ಎನ್.ಇ.ಪಿ - 2020ಪಠ್ಯಕ್ರಮ)

ಪರಿವಿಡಿ

ಘಟಕ - 1 ಕಾಯಕ

1. ಅ) ಕಾಯಕಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಎರಡು ವಚನಗಳು
ಆ) ಮಾದಾರ ಚೆನ್ನಯ್ಯ -ಜನಪದ ಶರಣ ಕಾವ್ಯ ಕೃತಿಯಿಂದ
2. ಮೋಜಿ -ಭಾರತೀಪ್ರಿಯ
3. ರಸ್ತೆ ನಕ್ಷತ್ರ ಕೃತಿಯ ಆಯ್ದು ಭಾಗ -ಟಿ.ಕೆ. ದಯಾನಂದ

ಘಟಕ - 2 ಬಡತನ

1. ಅ) ಎರಡು ಜನಪದ ತ್ರಿಪದಿಗಳು
ಆ) ಹೊಲಿಯುವ ಕೈಗಳು -ಸುಕನ್ಯ ಕಳಸ
2. ಧನಿಯರ ಸತ್ಯನಾರಾಯಣ -ಕೊರಡ್ಡಲ್ ಶ್ರೀನಿವಾಸ ರಾವ್
3. ಬೂದಿಯಾಗದ ಕೆಂಡ ಕೃತಿಯ ಆಯ್ದು ಭಾಗ -ವಿಜಯಕುಮಾರ್ ಸಿಗರನಹಳ್ಳಿ

ಘಟಕ - 3 ಕಾಲ

1. ಅ) ಮಾನಸರೇನಿನ್ನೂರು ವರ್ಷಮಂ ಬಳ್ಳಪರೇ? -ಪಂಪ
ಆ) ದಡಿಗವಣಂಗಳನೆ ಮೆಟ್ಟಿ ಮೆಲ್ಲನೆ ನಡೆದಂ -ರನ್ನ
2. ನಮ್ಮ ಸಂಸ್ಕೃತಿಯ ಹೆಮ್ಮೆ ಸಾಲದು -ಶಿವರಾಮ ಕಾರಂತ
3. ಹಗಲು ಇರುಳುಗಳ ನಡುವೆ -ಕಾ.ತ. ಚಿಕ್ಕಣ್ಣ

ಘಟಕ - 4 ಸಂಕೀರ್ಣ

1. ಅ) ಮುನ್ನೀರ್ ಬೆನ್ನೀರನೆ ಬೆರಸಲಣ್ಣ ತಣ್ಣೀರೊಳವೆ -ನಾಗಚಂದ್ರ
ಆ) ಒಲವಾದೊಡನೆ ರೂಪಿನ ಕೋಟಲೆಯೇವುದೊ -ಜನ್ನ
2. ಕೊಟ್ಟ ಕುರುರೆಯನೇರಲರಿಯದೆ -ಚಿದಾನಂದ ಸಾಲಿ
3. ಬೊಮ್ಮೇನಹಳ್ಳಿಯ ಅಮ್ಮ ಮತ್ತು ಚರಿಪಾರಣ್ಯದ ಪಕ್ಷಿಗಳು -ಮೇಟಿಕೆರೆ ಹಿರಿಯಣ್ಣ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಡಾ. ಮ. ರಾಮಕೃಷ್ಣ

ಸಹಸಂಪಾದಕರು

ಡಾ. ಡಿ. ವಿಜಯಲಕ್ಷ್ಮಿ

ಡಾ. ಪಿ. ಬೆಟ್ಟೇಗೌಡ

ಡಾ. ಚಿಕ್ಕಮಗಳೂರು ಗಣೇಶ

ಡಾ. ಭಾರತೀದೇವಿ ಪಿ

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಬಿ.ಎಸ್‌ಸಿ/ ಬಿ.ಎಸ್‌ಸಿ ಫ್ಯಾಡ್/ ಬಿಎಎಸ್‌ಎಲ್‌ಪಿ
ತೃತೀಯ ಚತುರ್ಮಾಸ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ವಿಜ್ಞಾನ ಗಂಗೋತ್ರಿ - 3

ಘಟಕ : 1 ಮಾನವೀಯತೆ

1. ಅ. ಚಂದ್ರಹಾಸನ ಪ್ರಸಂಗ -ಲಕ್ಷ್ಮೀಶ
ಆ. ನನ್ನ ನಾಯಿ -ಪು.ತಿ. ನರಸಿಂಹಾಚಾರ್
2. ತಾಯ್ತನ -ಎಚ್. ನಾಗವೇಣಿ
3. ಪ್ರೇಮ ಭಿಕ್ಷು (ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ) -ಪ್ರಭು ಶಂಕರ

ಘಟಕ : 2 ಪ್ರವಾಸ

1. ಅ. ಜೋಗನ ಗುಂಡಿ -ಮೂಗೂರು ಮಲ್ಲಪ್ಪ
ಆ. ಮೈಸೂರಿನಿಂದ ಮಡಿಕೇರಿಗೆ -ಅಬ್ದುಲ್ ರಶೀದ್
2. ಮಹಾನ್ ಗೋಡೆ -ಶೂದ್ರ ಶ್ರೀನಿವಾಸ್
3. ಅನಫಿಲ್ಲಮ್ ಮತ್ತು ಕದಂಬ -ಬಿ.ಜಿ.ಎಲ್. ಸ್ವಾಮಿ

ಘಟಕ : 3 ವಿಚಾರ ಕ್ರಾಂತಿ

1. ಅ. ಯಜಮಾನರಿಗೊಂಗು ಪತ್ರ -ಎನ್.ಕೆ. ಹನುಮಂತಯ್ಯ
ಆ. ದೊಡ್ಡಮ್ಮ ದೇವತೆಗೆ ಕಣ್ಣು ಧರಿಸಿದ ಹೊತ್ತು -ಕೆ.ಪಿ. ಮೃತ್ಯುಂಜಯ
2. ಮೈಮೇಲೆ ದೆವ್ವ ಬರುವುದೇ -ಡಾ.ಸಿ.ಆರ್. ಚಂದ್ರಶೇಖರ್
3. ಮಿಂಚಿನ ಅಕ್ಷರ ಮಾಲೆ -ಮೊಗ್ಗಿ ಗಣೇಶ್

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

1. ಅ. ನನ್ನಜ್ಜಿ -ನಾಗತಿಹಳ್ಳಿ ರಮೇಶ
ಆ. ಗಂಡಾಗಿ ಹುಟ್ಟಬೇಕಿತ್ತು -ಶ್ರೀದೇವಿ ಕೆರೆಮನೆ
2. ಹೃದಯ ದುರ್ಬಲವಾಗುತ್ತಿದೆಯೇ? -ಡಾ. ಆರ್.ಕೆ. ಸರೋಜ
3. ಡಾರ್ವಿನ್ ಮತ್ತು ಧರ್ಮ -ಡಾ. ಜಯಶಂಕರ ಭಂಡಾರಿ

ಸಂಪಾದಕರು

ಡಾ. ವಿಜಯಲಕ್ಷ್ಮೀ

ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಮಹಾರಾಣಿ ಮಹಿಳಾ ಕಾಲೇಜು, ಮೈಸೂರು

ಸಹ ಸಂಪಾದಕರು :

ಡಾ.ಎಸ್. ಇಂದಿರಮ್ಮ, ಡಾ. ಎಂ. ದೇವಮ್ಮಣ್ಣಿ, ಡಾ. ನಾಗರತ್ನಮ್ಮ, ಡಾ. ಎಂ. ಜಯಶಂಕರ ಹಲಗೂರು

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಬಿ.ಎಸ್‌ಸಿ/ ಬಿ.ಎಸ್‌ಸಿ ಫ್ಯಾಡ್/ ಬಿಎಎಸ್‌ಎಲ್‌ಪಿ
ಚತುರ್ಥ ಚತುರ್ಮಾಸ ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ವಿಜ್ಞಾನ ಗಂಗೋತ್ರಿ - 4

ಘಟಕ : 1 ದಮನಿತ ಲೋಕ

1. ಅ. ಅಲ್ಲೇ ಕುಂತವರೆ
ಆ. ಹಡದಿ ಹಾಸುವವರು -ಸಿದ್ದಲಿಂಗಯ್ಯ
-ವೀರಣ್ಣ ಮಡಿವಾಳರ
2. ಜೋಮನ ಮಡಿ (ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ) -ಕೆ.ಶಿವರಾಮಕಾರಂತ
3. ದೇವರ ಗುಡಿ -ಅಮರೇಂದ್ರ ಸೆಟ್ಟಿ

ಘಟಕ : 2 ಸಹಿಷ್ಣುತೆ

1. ಅ. ಭಿನ್ನ ಭೇದವ ಮಾಡ ಬ್ಯಾಡಿರೋ
ಆ. ಕುಲ ಕುಲ ಕುಲವೆಂದು -ಅಜ್ಞಾತ ತತ್ವಪದಕಾರ
-ಕನಕದಾಸ
2. ಒಂದು ಅಪೂರ್ವ ಸಂಸಾರ -ಕರಿಗೌಡ ಬೀಚನಹಳ್ಳಿ
3. ಮೀಯುವ ಆಟ -ಎಚ್. ನಾಗವೇಣಿ

ಘಟಕ : 3 ಶ್ರೀಸಾಮಾನ್ಯದ ಬದುಕು

1. ಅ. ಅಮ್ಮನ ಸೀರೆ
ಆ. ನಮ್ಮೂರ ಮಳ್ಳೇ ಮನೆ ಸೀತೆ -ಬಾನು ಮುಷ್ತಾಕ್
-ಎಚ್.ಆರ್. ಸುಜಾತ
2. ಕಕರನ ಯುಗಾದಿ -ಬೆಸಗರಹಳ್ಳಿ ರಾಮಣ್ಣ
3. ಮಾರಿಕೊಂಡವರು -ದೇವನೂರ ಮಹಾದೇವ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

1. ಅ. ನಂ ರೂಪಿ
ಆ. ವಕ್ರೀಭವನ -ಬಿ.ಟಿ. ಲಲಿತಾ ನಾಯಕ್
-ಲಲಿತಾ ಸಿದ್ದಬಸವಯ್ಯ
2. ಹಬ್ಬ ಮತ್ತು ರಥೋತ್ಸವ -ಗೊರೂರು ರಾಮಸ್ವಾಮಿ ಅಯ್ಯಂಗಾರ್
3. ಹದಿಹರೆಯದ ವಿದ್ಯಾರ್ಥಿಗಳ ಸ್ಥಿತಿ- ಗತಿಗಳು -ಡಾ. ಕೆ.ಆರ್. ಶ್ರೀಧರ್

ಸಂಪಾದಕರು

ಡಾ. ವಿಜಯಲಕ್ಷ್ಮೀ

ಸಹ ಪ್ರಾಧ್ಯಾಪಕರು, ಮಹಾರಾಣಿ ಮಹಿಳಾ ಕಾಲೇಜು, ಮೈಸೂರು

ಸಹ ಸಂಪಾದಕರು :

ಡಾ.ಎಸ್. ಇಂದಿರಮ್ಮ, ಡಾ. ಎಂ. ದೇವಮ್ಮಣ್ಣಿ, ಡಾ. ನಾಗರತ್ನಮ್ಮ, ಡಾ. ಎಂ. ಜಯಶಂಕರ ಹಲಗೂರು

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಮೂರನೇ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಕಾಂ
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ವಾಣಿಜ್ಯ ಗಂಗೋತ್ರಿ - 03

ಘಟಕ : 1 ಮನೋರಂಜನಾ ಮಾಧ್ಯಮ

1. ಅ. ಕೌರವಸೇನೆ ಕೆಡೆದುದು ನಗೆಯ ಕಡಲೊಳಗೆ
ಆ. ಕನ್ನಡಂ ಕತ್ತುರಿಯಲ್ಲೆ
-ಕುಮಾರವ್ಯಾಸ
-ಮುದ್ದಡಿ
2. ಪೆಯ್ದಂಡೆ (ಜನಪದ ಕಥೆ)
-(ಸಂ) ಡಾ. ಪಿ.ಕೆ.ಆರ್
3. ಜೀವಕೇಂದ್ರಿಕ
-ಡಾ. ಚಕ್ರೇ ಶಿವಶಂಕರ

ಘಟಕ : 2 ಮಾರುಕಟ್ಟೆ

1. ಅ. ಕೆಲಸವಿಲ್ಲದವರ ಹಾಡು
ಆ. ಎಲ್ಲಾ ಮಾಯ
-ದ.ರಾ. ಬೇಂದ್ರೆ
-ಗೊಲ್ಕಹಳ್ಳಿ ಶಿವಶಂಕರ್
2. ಎರೆಹುಳುವಿನ ಧಾರಣಾ ಶಕ್ತಿ
-ಷಹ್ಮಾಶೇಖರ್
3. ಮೇದರಹಳ್ಳಿಯ ಅವಸಾನ
-ತೊ.ಚಂ. ತೇಜಸ್ವಿ

ಘಟಕ : 3 ಲಿಂಗ ಸಮಾನತೆ

1. ಅ. ಆಯ್ದು ವಚನಗಳು
ಆ. ಹದಿಬದೆಯ ಧರ್ಮದ ಆಯ್ದು ಪಠ್ಯಗಳು
-ಬಾಮಮುಷ್ತಾಕ್
2. ಬೆಂಕಿಮಳೆ
3. ಬೆಂಕಿಬೆಡಗು (ಉಮಾಶ್ರೀ ಆತ್ಮಕಥೆಯ ಆಯ್ದುಭಾಗ)

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

1. ಅ. ಸಮಾಧಿಯ ಸತ್ವ
ಆ. ಭೀಮಾಲಾಪ
-ಮಾಸ್ತಿ
-ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
2. ಅಳು
-ಮನುಬಳಿಗಾರ್
3. ಹೈಟೆಕ್ ರಣವೈದ್ಯ
-ನಾಗೇಶ್ ಹೆಗ್ಡೆ

ಸಂಪಾದಕರು
ಡಾ. ತಿಮ್ಮಯ್ಯ
ಪ್ರಾಧ್ಯಾಪಕರು, ಮಹಾರಾಜ ಕಾಲೇಜು, ಮೈಸೂರು
ಸಹ ಸಂಪಾದಕರು

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ನಾಲ್ಕನೇ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಕಾಂ
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ವಾಣಿಜ್ಯ ಗಂಗೋತ್ರಿ - 04

ಘಟಕ : 1 ಕಡಲು

1. ಅ. ಪಂಪ, ಕನ್ನಡ ಕಾವ್ಯಗಳ ಆಯ್ದ ಪಠ್ಯಗಳು
ಆ. ಕುಮಾರವ್ಯಾಸ ಲಕ್ಷ್ಮೀಶರ ಆಯ್ದ ಪಠ್ಯಗಳು
2. ಬಿ.ಜಿ.ಎಲ್ ಸ್ವಾಮಿಯವರ ಪ್ರವಾಸ ಕಥನಗಳ ಆಯ್ದ ಭಾಗಗಳು
3. ಸಾವಿನೆಡೆಗೆ ಸವಾರರು (ನಾಟಕ) - ಸಿಂಜ್.ಜೆ.ಎಂ (ಮೂಲ) ಬಸವರಾಜ್ ನಾಯ್ಡ್ (ಅನುವಾದ)

ಘಟಕ : 2 ಸಹಬಾಳ್ವೆ

1. ಅ. ಆಯ್ದ ವಚನಗಳು
ಆ. ಆಯ್ದ ಕೀರ್ತನೆಗಳು
2. ನುಗ್ಗೆ ಗಿಡ - ನಾಮೋಗಸಾಲೆ
3. ಸಹಬಾಳ್ವೆ, ಸಹಿಷ್ಣುತೆ ಒಂದು ವಿವೇಚನೆ - ವಿ. ಮುಕಾದಿ

ಘಟಕ : 3 ಸಾವು

1. ಅ. ತಿರುಕೊಳವಿನಾಚಿಯ ಪ್ರಸಂಗ -ಷಡಕ್ಷರ ದೇವ
ಆ. ಚಂದ್ರಮತಿಯ ದುಃಖ -ರಾಘವಾಂಕ
2. ಸಾವು (ಲಲಿತ ಪ್ರಬಂಧ) -ವಿ. ಸಿತಾರಾಮಯ್ಯ
3. ಜೀವನ ಅಮರ, ಹುಟ್ಟು, ಸಾವು ತಾತ್ಕಾಲಿಕ -ಶಿವರಾಮ ಕಾರಂತ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

1. ಅ. ರಂಗೋಲಿ ಮತ್ತು ಮಗ -ಕೆ.ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್
ಆ. ಕಾಲ್ಕೆಂಡು -ಈಶ್ವರ ಸಲಿಕಲ್ಲ
2. ದೇವರು ಎಂಬೋ ದೇವರ ಸುತ್ತಾ -ಚಂಪಾ
3. ಎದೆಗೆ ಬಿದ್ದ ಅಕ್ಷರದ ಆಯ್ದಭಾಗ -ದೇವನೂರು ಮಹಾದೇವ

ಸಂಪಾದಕರು

ಡಾ. ತಿಮ್ಮಯ್ಯ

ಪ್ರಾಧ್ಯಾಪಕರು, ಮಹಾರಾಜ ಕಾಲೇಜು, ಮೈಸೂರು

ಸಹ ಸಂಪಾದಕರು

ಮೈಸೂರು ವಿಶ್ವ ವಿದ್ಯಾನಿಲಯ
ಮೂರನೆಯ ಚತುರ್ಮಾಸ - ಬಿ.ಸಿ.ಎ
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ಗಣಕ ಗಂಗೋತ್ರಿ - 3

ಘಟಕ - 1 ದೈನಂದಿನ ಲಯ

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| 1. ಅ. ಜನಪದ ತ್ರಿಪದಿಗಳು | - ಅಜ್ಞಾತ ಕವಿ |
| ಆ. ರಾಮನ್ ಸತ್ತ ಸುದ್ದಿ | - ಕೆ. ಎಸ್. ನಿಸಾರ್ ಅಹಮದ್ |
| 2. ತಟ್ಟೆಯ ಕೊನೆ ಅಗುಳು | - ಸುನಂದಾ ಕಡಮೆ |
| 3. ಅಂಧ ಅನುಕರಣೆಯ ಬಿಟ್ಟು | - ನೇಮಿಚಂದ್ರ |

ಘಟಕ - 2 ಸೌಹಾರ್ದ

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| 1. ಅ. ರೊಟ್ಟಿ ಮತ್ತು ಕೋವಿ | - ಸು. ರಂ ಎಕ್ಕುಂಡಿ |
| ಆ. ಎಲುಬಿನ ಹಂದರದೊಳಗೆ | - ಮೂಡ್ನಾಕೂಡು ಚಿನ್ನಸ್ವಾಮಿ |
| 2. ಭಾರತೀಯ ಸಮಾಜ, ಸಂಸ್ಕೃತಿ, ಮಹಿಳೆ | - ಸಾರಾ ಅಬೂಬಕ್ಕರ್ |
| 3. ಬಿಲಾಸಖಾನ | - ಶಂಕರ ಮೊಕಾಶಿ ಪುಣೇಕರ |

ಘಟಕ - 3 ಸ್ವಾತಂತ್ರ್ಯ

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| 1. ಅ. ಸ್ವಾತಂತ್ರ್ಯದ ಹಸಿವು | - ಎಂ. ಗೋಪಾಲಕೃಷ್ಣ ಅಡಿಗ |
| ಆ. ನಲವತ್ತೇಳರ ಸ್ವಾತಂತ್ರ್ಯ | - ಸಿದ್ದಲಿಂಗಯ್ಯ |
| 2. ಮಾಡಿ ಮಡಿದವರು (ಕಾದಂಬರಿಯ ಆಯ್ದ ಭಾಗ) | - ಬಸವರಾಜ ಕಟ್ಟಿಮನಿ |
| 3. ಗಿರಿಜವ್ವನ ರೊಟ್ಟಿ | - ಅ. ನ. ಕೃ |

ಘಟಕ - 4 ಸಂಕೀರ್ಣ

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| 1. ಅ. ಸಾರಥಿಯಾಗು ನಡೆ | - ಕುಮಾರವ್ಯಾಸ |
| ಆ. ಸೋಮೇಶ್ವರ ಶತಕ | - ಸೋಮೇಶ್ವರ |
| 2. ನಿಷಿದ್ಧ ಗಡಿಗಳ ದಾಟಿದ ಡಾ.ರುಕ್ಕಾಬಾಯಿ | - ಡಾ. ಎಚ್. ಎಸ್. ಅನುಪಮ |
| 3. ಉಡುದಾರ | - ಡಾ. ಜಾಜಿ ದೇವೇಂದ್ರಪ್ಪ |

ಸಂಪಾದಕರು

ಡಾ. ಕೆ. ಜಿ. ಕವಿತ

ಪ್ರಾಂಶುಪಾಲರು, ಮಹಿಳಾ ಸರ್ಕಾರಿ ಪ್ರಥಮ ದರ್ಜೆ ಕಾಲೇಜು, ಗಂಧದಕೋಠಿ, ಹಾಸನ

ಸಹ ಸಂಪಾದಕರು

ಶ್ರೀ ಅಶೋಕ ಎಚ್. ಕೆ. ಡಾ. ದಿನೇಶ ಕೆ. ಎಸ್, ಡಾ ತ್ರಿವೇಣಿ, ಡಾ. ಕವಿತಾ ಎಂ. ಎನ್

ಮೈಸೂರು ವಿಶ್ವ ವಿದ್ಯಾನಿಲಯ
ಮೂರನೆಯ ಚತುರ್ಮಾಸ ಬಿ.ಸಿ.ಎ
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ - 2020)
ಗಣಕ ಗಂಗೋತ್ರಿ - 4

ಘಟಕ - 1 ನಾಗರಿಕತೆ

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| 2. ಅ. ಇಟ್ಟಿಗೆಯ ಪಟ್ಟಣ | - ಚಂದ್ರಶೇಖರ ಕಂಬಾರ |
| ಆ. ಒಂದು ಸರೀ ಕಡ್ಡಿಗಾಗಿ | - ಜಯಂತ ಕಾಯ್ಕಿಣಿ |
| 2. ಒಂದು ಹುಲ್ಲಿನ ಕ್ರಾಂತಿ | - ಪುಕುವೋಕ |
| 3. ಸಂಸ್ಕೃತಿ ಮತ್ತು ನಾಗರಿಕತೆ | - ಭಾನು ಮುಸ್ತಾಕ್ |

ಘಟಕ - 2 ಅಭಿವೃದ್ಧಿ

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| 1. ಅ. ಮುಂಬೈ ಜಾತಕ | - ಜಿ. ಎಸ್. ಶಿವರುದ್ರಪ್ಪ |
| ಆ. ಪರದೆ ಸರಿದಂತೆ | - ಡಿ. ಬಿ. ರಜಿಯಾ |
| 2. ಡಾಂಬರು ಬಂದುದು | - ದೇವನೂರು ಮಹಾದೇವ |
| 3. ಲೂಟಿಯ ಹೆದ್ದಾರಿಗಳು | - ನಾಗೇಶ ಹೆಗಡೆ |

ಘಟಕ - 3 ಕರುಣೆ

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| 1. ಅ. ಉಪಕಾರಿಯಾದವಂ ತನ್ನ ನೋವಂ ನೋಳ್ವನೆ
(ಜೈಮಿನಿ ಭಾರತ ಕಾವ್ಯದ ಆಯ್ದಭಾಗ) | - ಲಕ್ಷ್ಮೀಶ |
| ಆ. ಗೋವಿನ ಹಾಡು | - ಚನ್ನಪಟ್ಟಣ ವಾಸುದೇವರಾಯ |
| 2. ಕೊನೆಯ ಗಿರಾಕಿ | - ನಿರಂಜನ |
| 3. ಹಿಂಸೆಯ ಸ್ವರೂಪಗಳು ಬಲಿ-ಬಲಿದಾನ | - ಮುರಾರಿ ಬಲ್ಲಾಳ |

ಘಟಕ - 4 ಸಂಕೀರ್ಣ

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| 1. ಅ. ಬಾಹುಬಲಿಯ ವೈರಾಗ್ಯಂ | - ಪಂಪ |
| ಆ. ಎರಡು ಗಿಳಿಗಳ ಕಥೆ (ಪಂಚತಂತ್ರ) | - ದುರ್ಗಸಿಂಹ |
| 2. ಚಾಪ್ಲಿನ್ (ಆಯ್ದಭಾಗ) | - ಕುಂ. ವೀರಭದ್ರಪ್ಪ |
| 3. ಚಿಗುರೊಡೆಯುತ್ತಿರುವ ಗಿಡದ ತನ್ಮಯತೆ | - ಕ್ಷೀರಸಾಗರ |

ಸಂಪಾದಕರು

ಡಾ. ಕೆ. ಜಿ. ಕವಿತ

ಪ್ರಾಂಶುಪಾಲರು, ಮಹಿಳಾ ಸರ್ಕಾರಿ ಪ್ರಥಮ ದರ್ಜೆ ಕಾಲೇಜು, ಗಂಧದಕೋಠಿ, ಹಾಸನ.

ಸಹ ಸಂಪಾದಕರು

ಶ್ರೀ ಅಶೋಕ ಎಚ್. ಕೆ. ಡಾ. ದಿನೇಶ ಕೆ. ಎಸ್, ಡಾ. ತ್ರಿವೇಣಿ, ಡಾ. ಕವಿತಾ ಎಂ. ಎನ್

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಮೂರನೆಯ ಚತುರ್ಮಾಸದ ಬಿ.ಬಿ.ಎ / ಬಿ.ಎಚ್.ಎಂ./ ಬಿ.ಓ.ಎಚ್
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ. - 2020)
ನಿರ್ವಹಣಾ ಗಂಗೋತ್ರಿ - 3

ಘಟಕ : 1 ಸಮಾಜ

1. ಅ) ಮಾದಾರ ಚಿನ್ನಯ್ಯನ ರಗಳೆ -ಹರಿಹರ
ಆ) ಪುರಂದರದಾಸರ ಕೀರ್ತನೆಗಳು -ಪುರಂದರದಾಸರು
2. ಧಣಿಗಳ ಬೆಳ್ಳಿಲೋಟ -ಎಚ್. ನಾಗವೇಣಿ
3. ಔದಾರ್ಯಕ್ಕೆ ಕೊನೆಯಂತೆ -ತ.ಸು. ಶಾಮರಾಮ್

ಘಟಕ : 2 ವೈಚಾರಿಕತೆ

1. ಅ) ಖ್ಯಾತ ಬ್ಯಾಡಪ್ಪ ನಮಗಿದು ಸರಿಯಿಲ್ಲ -ಜನಪದ ಮಹಾಭಾರತ
ಆ) ಅತಿಹಿತದಲಿ ನೀವಿಹುದು -ಕನಕದಾಸರು
2. ಅಕ್ಕು -ವೈದೇಹಿ
3. ನಮ್ಮ ಅಳತೆಯನ್ನು ಮೀರಲಾರದ ದೇವರು -ಶಿವರಾಮಕಾರಂತ

ಘಟಕ : 3 ಜೀವನ ಮತ್ತು ಕಲೆ

1. ಅ) ನುಡಿಬೇಕು ಮೌನವೂ ಬೇಕು -ರತ್ನಾಕರವರ್ಣಿ
ಆ) ಪರಮಕಲೆ ಜೀವನದ ಲಲಿತ ಕಲೆ -ಡಿ.ವಿ. ಗುಂಡಪ್ಪ
2. ನಾಟಕರತ್ನ ಗುಬ್ಬಿ ವೀರಣ್ಣನವರು -ಅ.ನ. ಕೃಷ್ಣರಾಯ
3. ಡಾ. ರಾಜ್‌ಕುಮಾರ್ : ನಾಡಿನ ನುಡಿ -ದೊಡ್ಡಹುಲ್ಲೂರ ರುಕ್ಕೋಜಾ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

1. ಅ) ರತ್ನಾಜಿ ಪ್ರಸಂಗ -ನಂಜುಂಡಕವಿ
ಆ) ಭೀಮಾಲಾಪ -ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
2. ಹುಳಿಮಾವು ಮತ್ತು ನಾನು -ಇಂದಿರಾ ಲಂಕೇಶ್
3. ಮೂರನೇ ಕಿವಿ -ರವೀಂದ್ರ ಭಟ್ಟ

ಸಂಪಾದಕರು

ಪ್ರೊ. ಕೃಷ್ಣಮೂರ್ತಿ, ಮಹಾರಾಣಿ ಕಾಮರ್ಸ್ ಕಾಲೇಜ್, ಮೈಸೂರು
ಸಹ ಸಂಪಾದಕರು

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ನಾಲ್ಕನೆಯ ಚತುರ್ಮಾಸದ ಬಿ.ಬಿ.ಎ / ಬಿ.ಎಚ್.ಎಂ. / ಬಿ.ಓ.ಎಚ್
ಕನ್ನಡ ಭಾಷಾ ಪಠ್ಯಕ್ರಮ (ಎನ್.ಇ.ಪಿ. - 2020)
ನಿರ್ವಹಣಾ ಗಂಗೋತ್ರಿ - 4

ಘಟಕ : 1 ಯುದ್ಧ

2. ಅ) ಇವರ ಯುದ್ಧವೆಂಬುದತಿ ಕ್ರೂರಗ್ರಹ ಯುದ್ಧದಂತೆ -ಪಂಪ
ಆ) ಸುರರ್ ಬೆದರೆ ಕಾದಿದರ್ ಕಸುಗಲಿಗಳ್ -ರನ್ನ
2. 'ಶೃಶಾನ ಕುರುಕ್ಷೇತ್ರಂ' ನಾಟಕದಿಂದ ಆಯ್ದಭಾಗ -ಕುವೆಂಪು
3. ನಾಗೇಶ ಹೆಗ್ಗಡೆ ಅವರ ಕೃತಿಯಿಂದ ಆಯ್ದ ಲೇಖನ -ನಾಗೇಶ ಹೆಗ್ಗಡೆ

ಘಟಕ : 2 ರಾಷ್ಟ್ರೀಯತೆ

2. ಅ) ಕನ್ನಡಮೆನಿಪ್ಪಾ ನಾಡು ಚೆಲ್ವಾಯ್ತು -ಆಂಡಯ್ಯ
ಆ) ಕಿತ್ತೂರ ಚೆನ್ನಮ್ಮ -ಜನಪದ ಕವಿ
2. ಸೆರೆಯಿಂದ ಹೊರಗೆ -ಬಸವರಾಜ ಕಟ್ಟಿಮನೆ
3. ಕನ್ನಡ ರಾಷ್ಟ್ರೀಯತೆ -ಡಿ.ಆರ್. ನಾಗರಾಜ

ಘಟಕ : 3 ಶಾಂತಿ

2. ಅ) ಶ್ರೀಕೃಷ್ಣ ರಾಯಭಾರ ಪ್ರಸಂಗ -ಕುಮಾರವ್ಯಾಸ
ಆ) ಗೋಲೊಥಾ -ಎಂ. ಗೋವಿಂದ ಪೈ
2. ವಚನಭಾರರದಿಂದ ಆಯ್ದಭಾಗ -ಎ.ಆರ್. ಕೃಷ್ಣಶಾಸ್ತ್ರಿ
3. ಶ್ವೇತಭವನದ ಮುಂದೆ -ನೇಮಿಚಂದ್ರ

ಘಟಕ : 4 ಸಂಕೀರ್ಣ

2. ಅ) ಶಾಸನ ಸಂಸ್ಕೃತಿ -ಶಾಸನ ಪದ್ಯಗಳು
ಆ) ಕನ್ನಡ ನಾಡು-ನುಡಿ -ಶ್ರೀ ವಿಜಯ
2. ಅಗ್ನಿರೆಕ್ಕೆಗಳು -ಎ.ಪಿ.ಜೆ. ಅಬ್ದುಲ್ ಕಲಾಮ್
3. ನ್ಯಾನೋ ತಂತ್ರಜ್ಞಾನ -ಜೆ.ಆರ್. ಲಕ್ಷ್ಮಣರಾವ್

ಸಂಪಾದಕರು

ಪ್ರೊ. ಕೃಷ್ಣಮೂರ್ತಿ, ಮಹಾರಾಣಿ ಕಾಮರ್ಸ್ ಕಾಲೇಜ್, ಮೈಸೂರು
ಸಹ ಸಂಪಾದಕರು

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸಾಹಿತ್ಯ ಗಂಗೋತ್ರಿ - 04
ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ (ಡಿಎಸ್‌ಸಿ)
ಪತ್ರಿಕೆ - 5(ಎ): ಭಾರತೀಯ ಮತ್ತು ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ

ಕ್ರೆಡಿಟ್‌ಗಳು - 3 ಪಾಠದ ಅವಧಿ - ವಾರಕ್ಕೆ 3 ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು ಹಾಗೂ
ಅಂತರಿಕ ಗುಣಾಂಕಗಳು 40, ಒಟ್ಟು ಅಂಕಗಳು - 100

1. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ: ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆಯ ಉಗಮ ಮತ್ತು
ವಿಕಾಸ, ಕಾವ್ಯ ಲಕ್ಷಣ, ಪ್ರತಿಭೇ ಮತ್ತು ವ್ಯುತ್ಪತ್ತಿ,
ಸಹ್ಯದಯ, ಕಾವ್ಯ ಪ್ರಯೋಜನಗಳು
2. ಪ್ರಮುಖ ಸಿದ್ಧಾಂತಗಳು: ಅಲಂಕಾರ (ಉಪಮ, ರೂಪಕ, ದೀಪಕ, ಯಮಕ)
ಧ್ವನಿ, ರಸ, ಔಚಿತ್ಯ
3. ಪಾಶ್ಚಾತ್ಯ ಮೀಮಾಂಸೆಗಳು: ಫ್ಲೇಟೋ (ಅನುಕರಣ ವಾದ) ಅರಿಸ್ಟಾಟಲ್
(ಕೆಥಾರ್ಸಿಸ್), ಟಿ.ಎಸ್. ಎಲಿಯಟ್ (ವ್ಯಕ್ತಿತ್ವ
ನಿರಸನ ಸಿದ್ಧಾಂತ)

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು:

1. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ತೀ.ನಂ.ಶ್ರೀ
2. ತೌಲನಿಕ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
3. ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ವಿ.ಎಂ ಇನಾಂದಾರ್
4. ಸಾಹಿತ್ಯ ಪ್ರವೇಶ - ಸಿ.ಪಿ.ಕೆ
5. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು - ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಶಿವಸ್ವಾಮಿ ಎ.ಎಂ.

ಸಹ ಸಂಪಾದಕರು: ಡಾ. ಎಚ್.ಪಿ. ಗೀತಾ

ಡಾ. ದಿನೇಶ್ ಹಾಸನ್

ಡಾ. ತ್ರಿವೇಣಿ

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸಾಹಿತ್ಯ ಗಂಗೋತ್ರಿ - 04
ಮೂರನೆಯ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ (ಡಿಎಸ್‌ಸಿ)
ಪತ್ರಿಕೆ - 6(ಎ): ಕನ್ನಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ ಆಧುನಿಕ ರೂಪಗಳು

ಕ್ರೆಡಿಟ್‌ಗಳು - 3 ಪಾಠದ ಅವಧಿ - ವಾರಕ್ಕೆ 3 ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು ಹಾಗೂ
ಅಂತರಿಕ ಗುಣಾಂಕಗಳು 40, ಒಟ್ಟು ಅಂಕಗಳು - 100

1. ಕನ್ನಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ: ಕಾವ್ಯ ಕುರಿತು ಕನ್ನಡ ಲಾಕ್ಷಣಿಕರ ಚಿಂತನೆಗಳು, ಕವಿರಾಜಮಾರ್ಗ, ಕಾವ್ಯಲೋಕನ, ಕನ್ನಡ ಕುವಲಯಾನಂದ, (ಜಾಯಗೊಂಡ), ಜಾನಪದ ಕಾವ್ಯ ಮೀಮಾಂಸೆ (ಜಾನಪದದಲ್ಲಿ ಕಾಣಿಯ ಕುರಿತ ಉಲ್ಲೇಖಗಳು)
2. ಆಧುನಿಕ ಕಾವ್ಯ ಮೀಮಾಂಸೆ: ಕುವೆಂಪು, ಪು.ತಿ.ನ, ಅಡಿಗ, ದಲಿತ - ಬಂಡಾಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ
3. ಮಹಿಳಾ ಕಾವ್ಯ ಮೀಮಾಂಸೆಗಳು: ಸ್ತ್ರೀ ಸಂವೇದನೆಯ ಹಿನ್ನೆಲೆಯಲ್ಲಿ ರೂಪಿತಗೊಂಡ ಕಾವ್ಯ ತತ್ವಗಳು

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು:

1. ಭಾರತೀಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ತೀ.ನಂ.ಶ್ರೀ
2. ತೌಲನಿಕ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ಎಚ್. ತಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
3. ಪಾಶ್ಚಾತ್ಯ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ವಿ.ಎಂ ಇನಾಂದಾರ್
4. ಸಾಹಿತ್ಯ ಪ್ರವೇಶ - ಸಿ.ಪಿ.ಕೆ
5. ಕನ್ನಡ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ನಟರಾಜ ಬೂದಾಳು
6. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ - ರಹಮತ್ ತರೀಕೆರೆ
7. ಜನಪದ ಕಾವ್ಯ ಮೀಮಾಂಸೆ - ವೀರಣ್ಣ ದಂಡೆ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಶಿವಸ್ವಾಮಿ ಎ.ಎಂ.

ಸಹ ಸಂಪಾದಕರು: ಡಾ. ಎಚ್.ಪಿ. ಗೀತಾ

ಡಾ. ಮಹಾದೇವ ಪ್ರಭು

ಡಾ. ಜ್ಯೋತಿ ಕೆ.ಎಸ್

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸಾಹಿತ್ಯ ಗಂಗೋತ್ರಿ - 04
ಎರಡನೇ ಬಿ.ಎ. ನಾಲ್ಕನೇ ಚತುರ್ಮಾಸ
ಐಚ್ಛಿಕ ಕನ್ನಡ (ಡಿಎಸ್‌ಸಿ)- ಪತ್ರಿಕೆ 07
ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆ

(ಒಟ್ಟು ಅಂಕಗಳು: 100, ಬೋಧನಾವಧಿ: ವಾರಕ್ಕೆ 3 ಗಂಟೆಗಳು (ಒಟ್ಟು 45 ಗಂಟೆಗಳು))

1. ಸಂಶೋಧನೆ: ಪರಿಕಲ್ಪನೆ, ಅರ್ಥಸ್ವರೂಪ, ಆಕರ ಸಾಮಗ್ರಿಗಳು, ಸಂಶೋಧನೆಯ ವಿಧಾನಗಳು, ಕ್ಷೇತ್ರಕಾರ್ಯ, ಪ್ರಶ್ನಾವಳಿಗಳು, ಸಂಶೋಧನೆ ಮತ್ತು ವಿಮರ್ಶೆಯ ಅಂತಃಸಂಬಂಧ
2. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ: ಸ್ವರೂಪ ಮತ್ತು ಲಕ್ಷಣಗಳು, ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ ಬೆಳೆದು ಬಂದ ದಾರಿ: ಪ್ಲೇಟೋ, ಅರಿಸ್ಟಾಟಲ್. ಹೋರಸ್, ಲಾಂಜೈನಸ್, ಕೋಲ್‌ರಿಡ್ಜ್, ಐ.ಎ. ರಿಚರ್ಡ್ಸ್ ಇವರ ಪ್ರಮುಖ ಸಿದ್ಧಾಂತಗಳ ಸ್ಥೂಲ ಪರಿಚಯ
3. ಆಧುನಿಕ ವಿಮರ್ಶಾ ಪ್ರಸ್ಥಾನಗಳ ಸ್ಥೂಲ ಪರಿಚಯ: ಕರ್ತೃನಿಷ್ಠ ವಿಮರ್ಶೆ, ಮನೋವಿಜ್ಞಾನಿಕ ವಿಮರ್ಶೆ, ಚಾರಿತ್ರಿಕ ವಿಮರ್ಶೆ (ಹಿಪೋಲಿಟ್ ಟೇನ್), ಮಾರ್ಕ್ಸ್‌ವಾದಿ ವಿಮರ್ಶೆ (ಐಡಿಯಾಲಜಿ, ಸಾಂಸ್ಕೃತಿಕ ಯಜಮಾನ್ಯ, ಅನಾಥಪ್ರಜ್ಞೆ, ಸಂಸ್ಕೃತಿ ಉದ್ಯಮ), ಸ್ತ್ರೀನಿಷ್ಠ ವಿಮರ್ಶೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು:

1. ಸಂಶೋಧನೆ: ಎಂ. ಚಿದಾನಂದ ಮೂರ್ತಿ
2. ಕನ್ನಡ ಸಂಶೋಧನಾ ಶಾಸ್ತ್ರ: ಡಾ. ಎಂ.ಎಂ. ಕಲಬುರ್ಗಿ
3. ಸಂಶೋಧನಾ ವಿಧಾನ: ಪಿ.ವಿ. ಕುಲಕರ್ಣಿ, ಹರಿಕೃಷ್ಣ ಭರಣ್ಯ, ಜಿ. ಸದಾಶಿವ
4. ಕನ್ನಡ ಸಂಶೋಧನಾ ಮಾರ್ಗ ಮತ್ತು ಇತಿಹಾಸ: ಡಾ. ಸಂಗಮೇಶಸವದತ್ತಿಮಠ
5. ಸಂಶೋಧನಾ ರಂಗ: ತಾಳಚೆ ವಸಂತಕುಮಾರ
6. ಸಂಶೋಧನಾ ಸ್ವರೂಪ: ಡಾ. ಬಿ.ವಿ. ಶಿರೂರ
7. ಮಾನವಿಕ ಸಂಶೋಧನೆ: ಡಾ. ಚಂದ್ರ ಪೂಜಾರಿ
8. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆ: ಸಿ.ಎನ್. ರಾಮಚಂದ್ರನ್
9. ವಿಮರ್ಶೆಯ ಪೂರ್ವ ಪಶ್ಚಿಮ: ಡಾ. ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
10. ಸಾಹಿತ್ಯ ವಿಮರ್ಶೆಯ ಮೂಲತತ್ವಗಳು: ಡಾ. ಎಚ್. ಶಿಪ್ಪೇರುದ್ರಸ್ವಾಮಿ
11. ವಿಮರ್ಶೆಯ ಪರಿಭಾಷೆ: ಓ.ಎಲ್. ನಾಗಭೂಷಣ ಸ್ವಾಮಿ
12. ಪ್ರಾಯೋಗಿಕ ವಿಮರ್ಶೆ: ಡಾ. ಜಿ.ಎಸ್. ಶಿವರುದ್ರಪ್ಪ
13. ಕನ್ನಡ ಸಾಹಿತ್ಯ ಮೀಮಾಂಸೆ: ಡಾ. ರಹಮತ್ ತರೀಕೆರೆ
14. ಪಾಶ್ಚಾತ್ಯ ಸಾಹಿತ್ಯ ವಾದಗಳು: ಸಿ.ಆರ್. ಯರವಿನತಲೆಮಠ
15. ಕಾವ್ಯ ಶಾಸ್ತ್ರ ಪರಿಭಾಷೆ: ಮಲ್ಲೇಪುರಂ.ಜಿ. ವೆಂಕಟೇಶ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಶಿವಸ್ವಾಮಿ.ಎ.ಎಂ

ಸಹಸಂಪಾದಕರು

ಡಾ. ಡಿ. ವಿಜಯಲಕ್ಷ್ಮಿ

ಡಾ. ಹೆಚ್.ಡಿ. ಉಮಾಶಂಕರ್

ಡಾ. ಭಾರತೀದೇವಿ ಪಿ

ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಸಾಹಿತ್ಯ ಗಂಗೋತ್ರಿ - 04
ನಾಲ್ಕನೆಯ ಸೆಮಿಸ್ಟರ್ ಐಚ್ಛಿಕ ಕನ್ನಡ (ಡಿಎಸ್‌ಸಿ)
ಪತ್ರಿಕೆ - 8(ಎ): ಜಾನಪದ ಹಾಗೂ ಮಹಿಳಾ ಸಾಹಿತ್ಯ

ಕ್ರೆಡಿಟ್‌ಗಳು - 3 ಪಾಠದ ಅವಧಿ - ವಾರಕ್ಕೆ 3 ಗಂಟೆಗಳು, ಲಿಖಿತ ಪರೀಕ್ಷೆಗೆ 60 ಅಂಕಗಳು ಹಾಗೂ
ಅಂತರಿಕ ಗುಣಾಂಕಗಳು 40, ಒಟ್ಟು ಅಂಕಗಳು - 100

1. ಜಾನಪದ - ಜಾನಪದ ಭೌತಿಕ ಜಾನಪದ, ಮೌಖಿಕ ಜಾನಪದ, ಜನಪದ ಮಹಾಕಾವ್ಯಗಳು, ಪ್ರದರ್ಶನ ಕಲೆಗಳೂ, ನಾಟಕಗಳು, ಐರಿಹ್ಯಗಳು
2. ಜಾನಪದ ಕ್ಷೇತ್ರ ಕಾರ್ಯ: ಜಾನಪದ ಸಾಹಿತ್ಯ ಸಂಗ್ರಹ, ವರ್ಗೀಕರಣ, ವಿಶ್ಲೇಷಣೆ
3. ಮಹಿಳಾ ಸಾಹಿತ್ಯ: ಕನ್ನಡ ಸಾಹಿತ್ಯದಲ್ಲಿ ಮಹಿಳೆ, ಕನ್ನಡ ಲೇಖಕಿಯರು, ನಂಜನಗೂಡು ತಿರುಮಲಾಂಬಾ, ಕೊಡಗಿನ ಗೌರಮ್ಮ, ಅನುಪಮಾ, ನಿರಂಜನ, ವೈದೇಹಿ, ಸಾರಾ ಅಬೂಬಕರ, ಗುಲಾಬಿ ಟಾಕೀಸ್ ಒಂದು ವಿಶ್ಲೇಷಣೆ

ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು:

1. ಜಾನಪದ ಕಾವ್ಯಗಳು: ಸಂ; ಆರ್.ವಿ.ಎಸ್. ಸುಂದರಂ, ಮೈಸೂರು ವಿ ವಿ
2. ಜಾನಪದ ಸಿದ್ಧಾಂತಗಳು - ವೀರಣ್ಣ ದಂಡೆ
3. ಜಾನಪದ ತತ್ವಗಳು ಮತ್ತು ಸಿದ್ಧಾಂತಗಳು - ಅಂಬಳಿಕೆ ಹಿರಿಯಣ್ಣ
4. ಜಾನಪದ ಸಾಹಿತ್ಯ - ಗಿರಡ್ಡಿ ಗೋವಿಂದರಾಜ
5. ಸ್ತ್ರೀ ವಾದ ದಿಕ್ಕೂಚಿ - ಆರ್ ಇಂದಿರಾ
6. ಸ್ತ್ರೀ ವಾದ - ಬಿ.ಎನ್. ಸುಮಿತ್ರಾಬಾಯಿ
7. ಮಹಿಳಾ ಸಾಹಿತ್ಯ ಸಮೀಕ್ಷೆ - ಆಚಾರ್ಯಾಂಬಾ ಪಟ್ಟಾಬಿ
8. ಆಧುನಿಕ ಮಹಿಳಾ ಸಾಹಿತ್ಯ - ಉಷಾ ಎಂ

ಪ್ರಧಾನ ಸಂಪಾದಕರು: ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್

ಸಂಪಾದಕರು: ಶಿವಸ್ವಾಮಿ ಎ.ಎಂ.

ಸಹ ಸಂಪಾದಕರು: ಡಾ. ಸೀತಾ ಎ. ಎಂ

ಡಾ. ಷಹಸೀನಾ ಬೇಗಂ

ಡಾ. ಕವಿತಾ

ಕನ್ನಡ ಭಾಷಾಂತರ : ತತ್ವ ಮತ್ತು ಪ್ರಯೋಗ

ಮುಕ್ತ ಗಂಗೋತ್ರಿ, ಭಾಷಾಂತರ - 03

ಘಟಕ 1 : ಭಾಷಾಂತರ ಅಗತ್ಯತೆ ಮತ್ತು ಸವಾಲುಗಳು

1.1 ಭಾಷಾಂತರ ಪರಿಕಲ್ಪನೆ, ವಿವಿಧ ವ್ಯಾಖ್ಯಾನಗಳು

1.2 ಭಾಷಾಂತರ ನಡೆದು ಬಂದ ದಾರಿ

ಘಟಕ 2 : ಕನ್ನಡ ಭಾಷಾಂತರ : ತೊಡಕು ಮತ್ತು ಪರಿಹಾರಗಳು

2.1 ಪರಿಭಾಷೆಗಳ ತೊಡಕುಗಳು ಮತ್ತು ಪರಿಹಾರಗಳು

2.2 ಸಂವಹನದ ತೊಡಕುಗಳು ಮತ್ತು ಪರಿಹಾರಗಳು

ಘಟಕ 3 : ಭಾಷಾಂತರ ಸಿದ್ಧಾಂತಗಳು

3.1 ದೇಶಿ ವಿದ್ವಾಂಸರ ಚಿಂತನೆಗಳು

3.2 ಪಾಶ್ಚಾತ್ಯ ವಿದ್ವಾಂಸರ ಚಿಂತನೆಗಳು

ಘಟಕ 4 : ಪ್ರಾಯೋಗಿಕ ಭಾಷಾಂತರ

ಪಠ್ಯಗಳು

1. ಭಾಷಾಂತರ ಕಲೆ : ಡಾ. ಪ್ರಧಾನ ಗುರುದತ್ತ, 1989
2. ಭಾಷಾಂತರ ಪ್ರವೇಶಿಕೆ : ಡಾ. ಎಂ. ಉಷಾ, ಪ್ರಸಾರಾಂಗ
ಕನ್ನಡ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಹಂಪಿ 2014
3. ಭಾಷಾಂತರ ಸೌರಭ : ಡಾ. ಲಕ್ಷ್ಮೀನಾರಾಯಣ ಅರೋರ,
ಉನ್ನತಿ ಪ್ರಕಾಶನ, ಮೈಸೂರು, 2015
4. ಭಾಷಾಂತರ ಸುಧೆ : ಡಾ. ಲಕ್ಷ್ಮೀನಾರಾಯಣ ಅರೋರ,
ದುರ್ಗಾ ಬುಕ್‌ಹೌಸ್, ಬೆಂಗಳೂರು, 2015

ಇವುಗಳ ಜೊತೆಗೆ 'ಪಾಶ್ಚಾತ್ಯ ವಿದ್ವಾಂಸರ ಚಿಂತನೆಗಳು' ಎಂಬ 3ನೆಯ ಘಟಕದ 3.2 ಉಪ ವಿಭಾಗದಲ್ಲಿ ಸೂಚಿಸಿರುವ ಆಂಗ್ಲಭಾಷೆಯಲ್ಲಿರುವ ಗ್ರಂಥಗಳನ್ನು ಅವಲೋಕಿಸುವುದು ಅಪೇಕ್ಷಣೀಯ.

ಪದವಿಯ ಮೂರನೆಯ ಚತುರ್ಮಾಸ ಮುಕ್ತ ಆಯ್ಕೆ

ಪತ್ರಿಕೆ - 3

ಪತ್ರಿಕೆಯ ಹೆಸರು - 'ಕನ್ನಡ ಜನಪದ ಸಾಹಿತ್ಯ'

ಘಟಕ 1

1. ಜನಪದ ಸಾಹಿತ್ಯ, ಅದರ ಸ್ವರೂಪ -ಡಾ. ಹಾ ಮಾ ನಾಯಕ
2. ಜನಪದ ಗೀತೆ -ಡಾ. ರಾಗೌ
3. ಜನಪದ ಕಥೆ -ಡಾ. ಹಿ ಶಿ ರಾಮಚಂದ್ರೇಗೌಡ

ಘಟಕ 2

1. ಲಾವಣಿ -ಜಿ.ಶಂ. ಪರಶಿವಯ್ಯ
2. ಗಾದೆ -ದೇಜಗೌ
3. ಒಗಟುಗಳು -ಕೃತನಹಳ್ಳಿ ರಾಮಣ್ಣ

ಘಟಕ 3

1. ಮ್ಯಾದರ ಹೆಣ್ಣು -ಸಂ. ಎಚ್.ಎಲ್. ನಾಗೇಗೌಡ
2. ಗಿಣಿ ಒಳಗಿನ ರಾಜಕುಮಾರಿ -ಸಂ. ಡಿ. ಲಿಂಗಯ್ಯ
3. ಸಂಗೊಳ್ಳಿ ರಾಯಣ್ಣ -ಸಂ. ಶಂಕರ ಸಿ ಕುಂಬಾರ

ಘಟಕ 4

1. ಕೆಲವು ಗಾದೆಗಳು -ಸಂ. ಸುಧಾಕರ
2. ಕೆಲವು ಒಗಟುಗಳು -ಸಂ. ರಾಗೌ

ನಾಲ್ಕನೇ ಚತುರ್ಮಾಸದ ಮುಕ್ತ ಆಯ್ಕೆಯ ಪಠ್ಯಗಳನ್ನು ನಂತರದಲ್ಲಿ ಸೇರಿಸಲಾಗುವುದು.

ಸಹಿ/

ಪ್ರೊ. ವಿಜಯಕುಮಾರಿ ಎಸ್ ಕರಿಕಲ್
ಅಧ್ಯಕ್ಷರು
ಕನ್ನಡ ಅಧ್ಯಯನ ಮಂಡಳಿ (ಸ್ನಾತಕ)
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ, ಮೈಸೂರು


UNIVERSITY OF MYSORE
Estd. 1916

VishwavidyanilayaKaryasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21

Dated:10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Mathematics (UG)
(III & IV Semester) with effective from the Academic year
2022-23 as per NEP-2020.

- Ref:-**
1. Decision of Board of Studies in of Mathematics (UG) Meeting held on 30-05-2022.
 2. Decision of the Faculty of Science & Technology Meeting held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Mathematics (UG) which met on 30-05-2022 has recommended & approved the syllabus and pattern of Examination of Mathematics Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively has also approved the above said syllabus and hence it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft Approved by the Registrar


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Mathematics, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Earth Science, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.

NATIONAL EDUCATION POLICY 2020 INITIATIVES

B.A./B.Sc. (Hons) Mathematics,
B.A./B.Sc. with Mathematics as a Major/Minor Subject

SYLLABUS FOR

B.Sc. MATHEMATICS (SECOND YEAR)

**W.E.F. THE ACADEMIC YEAR
2022-23**

**UNIVERSITY OF MYSORE
MYSURU**

Preamble

The subject wise expert committee to draft model curriculum contents in Mathematics constituted by the Department of Higher Education, Government of Karnataka, Bangalore vide GO No. ED 260 UNE 2019 (PART-1) DATED 13.08.2021 is pleased to submit its partial report on the syllabus for the First Year (First & Second Semesters) B.A./B.Sc.(Basic/Honors) Mathematics and detailed Course Structure for B.A./B.Sc.(Honors) Mathematics and M.Sc. (One Year) Mathematics.

The committee discussed various models suggested by the Karnataka State Higher Education Council in its joint meetings with the Chairpersons of Board of Studies of all state universities in Karnataka and resolved to adopt Model IIA (*Model Program Structure for the Bachelor of Arts (Basic/Hons.)/ Bachelor of Science (Basic/Hons.)*) for the subjects with practical's with Mathematics as Major/Minor.

To achieve the core objectives of the National Education Policy 2020 it is unanimously resolved to introduce computer based practical's for the Discipline Core (DSC) courses by using Free and Open Source Software's (FOSS) tools for implementation of theory based on DSC courses as it is also suggested by the LOCF committee that the papers may be taught using various Computer Algebra System (CAS) software's such as Mathematica, MATLAB, Maxima and R to strengthen the conceptual understanding and widen up the horizon of students' self-experience. In view of these observations the subject expert committee suggested the software's Python /R / Msxima/ Scilab/ Maple/MatLab/Mathematica for hands on experience of implementation of mathematical concepts in computer based lab.

The expert committee suggests the implementation this curriculum structure in all the Departments of Mathematics in Universities/Colleges in Karnataka.

The subject expert committee designed the Course Learning Outcome (CO) to help the learners to understand the main objectives of studying the courses by

keeping in mind of the Programme outcomes (PO) of the graduate degree with honors in Mathematics or a graduate degree with Mathematics as a major subject.

As the Mathematics subject is a vast with several branches of specializations, it is difficult for every student to learn each branch of Mathematics, even though each paper has its own importance. Hence the subject expert committee suggests number of elective papers (for both Discipline electives and Open Electives) along with Discipline Core Courses. The BoS in Mathematics of universities may include additional electives based on the expertise of their staff and needs of the students'. A student can select elective paper as per her/his needs and interest.

The subject expert committee in Mathematics suggests that the concerned Department/Autonomous Colleges/Universities to encourage their faculty members to include necessary topics in addition to courses suggested by the expert committee.

Name of the Degree Program : B.A./B.Sc.
Discipline Course : Mathematics
Starting Year of Implementation : 2021-22

Programme Outcomes (PO): By the end of the program the students will be able to :

PO 1	Disciplinary Knowledge : Bachelor degree in Mathematics is the culmination of in-depth knowledge of Algebra, Calculus, Geometry, differential equations and several other branches of pure and applied mathematics. This also leads to study the related areas such as computer science and other allied subjects
PO 2	Communication Skills: Ability to communicate various mathematical concepts effectively using examples and their geometrical visualization. The skills and knowledge gained in this program will lead to the proficiency in analytical reasoning which can be used for modeling and solving of real life problems.
PO 3	Critical thinking and analytical reasoning: The students undergoing this programme acquire ability of critical thinking and logical reasoning and capability of recognizing and distinguishing the various aspects of real life problems.
PO 4	Problem Solving : The Mathematical knowledge gained by the students through this programme develop an ability to analyze the problems, identify and define appropriate computing requirements for its solutions. This programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.
PO 5	Research related skills: The completing this programme develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
PO 6	Information/digital Literacy: The completion of this programme will enable the learner to use appropriate softwares to solve system of algebraic equation and differential equations.
PO 7	Self – directed learning: The student completing this program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
PO 8	Moral and ethical awareness/reasoning: : The student completing this program will develop an ability to identify unethical behavior such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
PO 9	Lifelong learning: This programme provides self directed learning and lifelong learning skills. This programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.
PO 10	Ability to peruse advanced studies and research in pure and applied Mathematical sciences.

Assessment

Weightage for the Assessments (in percentage)

Type of Course	Formative Assessment/ I.A.	Summative Assessment (S.A.)
Theory	40%	60 %
Practical	50%	50 %
Projects	--	--
Experiential Learning (Internship etc.)	--	--

**Contents of Courses for B.A./B.Sc. with Mathematics as Major Subject &
B.A./B.Sc. (Hons) Mathematics
Model IIA**

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
III	MATDSCT3.1	Theory	4	Algebra - III and Differential Equations – I	60	40
	MATDSCP3.1	Practical	2	Theory based Practical's on Algebra - III and Differential Equations – I	25	25
	MATOET3.1 MATOET3.2	Theory Theory	3	Discrete Mathematics – I Mathematical Aptitude – III	60	40
IV	MATDSCT4.1	Theory	4	Real Analysis - I and Differential Equations – II	60	40
	MATDSCP4.1	Practical	2	Theory based Practical's on Real Analysis - I and Differential Equations – II	25	25
	MATOET4.1 MATOET4.2	Theory Theory	3	Basics of Number Theory Mathematical Aptitude – IV	60	40

1. Scheme of Admission: As per the University rules.
2. Eligibility: As prescribed by the University.
3. Scheme of Examination: Continuous assessment.

THEORY EXAMINATION (For Discipline Specific Course(DSC) papers):

(i) Internal Assessment

C1 Component : 20 Marks. This will be based on test for 10 marks and seminar for 10 marks. This should be completed by the 8th week of the semester.

C2 Component : 20 Marks. This will be based on test for 10 marks and assignment for 10 marks. This should be completed by the 15th week of the semester.

(ii) C3 component (Main Examination of 2 hours duration) : 60 Marks. The pattern of the question paper will be as follows:

There will be 04 questions. All questions must be answered. All questions carry 15 marks.

Question 1. This question covers unit I of the syllabus. There will be 5 sub- questions each carrying 5 marks. The student has to answer any three of the 5 sub-questions.

Question 2. This question covers unit II of the syllabus. There will be 5 sub- questions each carrying 5 marks. The student has to answer any three of the 5 sub-questions.

Question 3. This question covers unit III of the syllabus. There will be 5 sub- questions each carrying 5 marks. The student has to answer any three of the 5 sub-questions.

Question 4. This question covers unit IV of the syllabus. There will be 5 sub- questions each carrying 5 marks. The student has to answer any three of the 5 sub-questions.

PRACTICAL EXAMINATION (For Discipline Specific Course (DSC) papers):

(i) Internal Assessment: 25 (10 + 5 + 10)

This will be based on test (10 marks), Seminar/practical record maintenance (5 marks) and assignment (10 marks). This should be completed by the 15th week of the semester.

(ii) Main Examination (3 hours duration): 25 (20 + 5)

There will be 3 questions each carrying equal marks. The student has to answer any 2 of the 3 questions (20 marks). Each student will be subjected to viva-voce examination, based on practical syllabus, for 5 marks.

THEORY EXAMINATION (For Open Elective (OE) papers):

(i) Internal Assessment

C1 Component : 20 Marks. This will be based on test for 10 marks and seminar for 10 marks. This should be completed by the 8th week of the semester.

C2 Component : 20 Marks. This will be based on test for 10 marks and assignment for 10 marks. This should be completed by the 15th week of the semester.

(ii) C3 component (Main Examination of 2 hours duration) : 60 Marks. The pattern of the question paper will be as follows:

There will be 03 questions. All questions must be answered. All questions carry 20 marks.

Question 1. This question covers unit I of the syllabus. There will be 6 sub- questions each carrying 5 marks. The student has to answer any four of the 6 sub-questions.

Question 2. This question covers unit II of the syllabus. There will be 6 sub- questions each carrying 5 marks. The student has to answer any four of the 6 sub-questions.

Question 3. This question covers unit III of the syllabus. There will be 6 sub- questions each carrying 5 marks. The student has to answer any four of the 6 sub-questions.

4. Minimum marks for Securing Credits: 30% in Theory Examination and 40% overall.
5. Minimum credits for getting B.Sc. Degree: As per NEP regulations.
6. Award of certificate/diploma/degree: As per NEP regulations.

CURRICULUM STRUCTURE FOR UNDERGRADUATE DEGREE PROGRAM

Name of the Degree Program : B.A. / B.Sc. (Honors)

Discipline/Subject : Mathematics

Starting Year of Implementation: 2021-22

PROGRAM ARTICULATION MATRIX

Semester	Course No.	Programme Outcomes that the Course Addresses	Pre-Requisite Course(s)	Pedagogy*	Assessment**
I	MATDSCT1.1	PO 1, PO 2, PO 3	----	MOOC	CLASS TESTS SEMINAR QUIZ ASSIGNMENT ASSIGNMENTS GROUP DISCUSSION TERM END EXAM VIVA-VOCE
II	MATDSCT2.1	PO 1, PO 2, PO 3, PO 8	MATDSCT1.1	PROBLEM SOLVING	
III	MATDSCT3.1	PO 1, PO 4, PO7, PO 8	----	SEMINAR	
IV	MATDSCT4.1	PO 1, PO 4, PO7, PO 8	MATDSCT3.1	PROJECT BASED	
V	MATDSCT5.1	PO 1, PO 2, PO 3, PO 5	----	LEARNING	
V	MATDSCT5.2	PO 3, PO 4, PO 7, PO10	MATDSCT2.1	ASSIGNMENTS	
VI	MATDSCT6.1	PO 6, PO 7, PO 10.	MATDSCT5.2	GROUP DISCUSSION	
VI	MATDSCT6.2	PO 3, PO 4, PO 5, PO 8, PO 9, PO 10.	MATDSCT1.1 & MATDSCT2.1		
VII	MATDSCT7.1	PO 3, PO 4, PO5, PO 7, PO 9.	MATDSCT1.1 & MATDSCT2.1		
VII	MATDSCT7.2	PO 2, PO 4, PO 5, PO 10	MATDSCT3.1		
VII	MATDSCT7.3	PO 2, PO 4, PO 5, PO 10	MATDSCT3.1		
VIII	MATDSCT8.1	PO 2, PO 4, PO 5, PO 10	MATDSCT5.1		
VIII	MATDSCT8.2	PO 2, PO 4, PO 5, PO 10	MATDSCT4.1		
VIII	MATDSCT8.3	PO 2, PO 4, PO 5, PO 10	MATDSCT7.3		

** Pedagogy for student engagement is predominantly Lecture. However, other pedagogies enhancing better student engagement to be recommended for each course. This list includes active learning/ course projects / Problem based or Project based Learning / Case Studies / Self Study like Seminar, Term Paper or MOOC.

*** Every Course needs to include assessment for higher order thinking skills (Applying/ / Evaluating / Creating). However, this column may contain alternate assessment methods that help formative assessment (i.e. assessment for Learning).

**Credit Distribution for B.A./B.Sc.(Honors) with Mathematics as
Major in the 3rd Year
(For Model IIA)**

Subject	Semester	Major/ Minor in the 3 rd Year	Credits					
			Discipline Specific Core (DSC)	Open Elective (OE)	Discipline Specific Elective (DSE)	AECC & Languag es	Skill Enhancement Courses (SEC)	Total Credi ts
Mathematics	I - IV	Major	4 Courses $(4+2) \times 4 = 24$	4 Courses $3 \times 4 = 12$	---	$(4+4=8)$ Courses $8 \times (3+1) = 32$	2 Courses $2 \times (1+1) = 4$	72
Other Subject		Minor	24	--	--	--	--	24
96								
Mathematics	V & VI	Major	4 Courses $4 \times (3+2) = 20$	----	2 Courses $2 \times 3 = 06$	---	2 Courses $2 \times 2 = 4$	30
Other Subject		Minor	10	--	--	--	--	10
(96+40)=136								
Mathematics	VII & VIII	Major	2 Courses $2 \times (3+2) = 10$ 3 Courses $3 \times 4 = 12$ 1 Course $1 \times 3 = 3$ Total=25	----	2 Courses $2 \times 3 = 6$ Res.Meth $1 \times 3 = 3$ 2 Courses $2 \times 3 = 6$ Total= 15	----	----	40
Total No. of Courses			14	04	07	08	04	
136+40=176								

**Syllabus for B.A./B.Sc. with Mathematics as Major Subject &
B.A./B.Sc. (Hons) Mathematics**

SEMESTER – III

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

Course Learning Outcomes: This course will enable the students to

- enhance learning in Algebra and Differential Equations.
- apply the concepts of algebra in practical problems.
- solve various differential equations of practical interest.

UNIT I: Group Theory – I (14 hrs)

Definition and examples of groups – Some general properties of Groups, Subgroups, Group of permutations – Cyclic permutations – Even and odd permutations. Order of an element of a group – Cyclic groups problems and theorems.

UNIT II: Group Theory – II (14 hrs)

Cosets, Index of a group, Lagrange's theorem, consequences, Normal Subgroups, Quotient groups – Homomorphism. – Kernel of homomorphism – Isomorphism - Automorphism – Fundamental theorem of homomorphism, Cayley's theorem.

UNIT III: Differential Equations – I (14 hrs)

Recapitulation of Definition, examples of differential equations, Formation of differential equations by elimination of arbitrary constants, Differential equations of first order – Separation of variables, Reducible to separation of variables, Homogeneous differential equations, Reducible to homogeneous, Exact differential equations, Reducible to exact, Integrating factors found by inspection and the determination of integrating factors, Linear differential equations, Bernoulli's differential equations.

UNIT IV: Differential Equations – II (14 hrs)

Equations of First order and higher degree – Solvable for p, Solvable for x, Solvable y, Clairaut's equations – Singular and General solutions.

Ordinary Linear differential equations with constant coefficients – Complementary function – particular integral – Inverse differential operators. Simultaneous differential equations (two variables with constant coefficients)

Books for References:

1. Daniel A Murray – Introductory Course to Differential equations
2. Earl David Rainville and Philip Edward Bedient – A short course in Differential equations, Prentice Hall College Div; 6th edition.
3. I N Herstien – Topics in Algebra.
4. Joseph Gallian – Contemporary Abstract Algebra, Narosa Publishing House, New Delhi, Fourth Edition.
5. G. D. Birkhoff and S Maclane – A brief Survey of Modern Algebra.
6. J B Fraleigh – A first course in Abstract Algebra.
7. Michael Artin – Algebra, 2nd ed. New Delhi, India: PHI Learning Pvt. Ltd., 2011.
8. Vashista, A First Course in Modern Algebra, 11th ed.: Krishna Prakasan Mandir, 1980.
9. R Balakrishan and N.Ramabadran, A Textbook of Modern Algebra, 1st ed. New Delhi, India: Vikas publishing house pvt. Ltd., 1991.
10. M D Raisinghania, Advanced Differential Equations, S Chand and Co. Pvt. Ltd., 2013.
11. F Ayres, Schaum's outline of theory and problems of Differential Equations, 1st ed. USA McGraw-Hill, 2010.
12. S Narayanan and T K Manicavachogam Pillay, Differential Equations .: S V Publishers Private Ltd., 1981.
13. E Kreyszig- Advanced Engineering Mathematics, Wiley India Pvt. Ltd.
14. G F Simmons, Differential equation with Applications and historical notes, 2nd ed.: McGraw-Hill Publishing Company, Oct 1991.

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

Course Learning Outcomes: This course will enable the students to

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

Practical/Lab Work to be performed in Computer Lab (FOSS)

Suggested Software's: Maxima/Scilab /Python/R.

Introduction to the software and commands related to the topic.

1. Generate Cayley's table.
2. Verifying whether given operator is binary or not.
3. Finding identity and inverse elements of a group.
4. Finding left and right cosets of a group.
5. Solving Differential equation using Maxima and plotting the solution.

Open Elective Course
(For Students of all Streams)

MATOET 3.1: Discrete Mathematics	
Teaching Hours : 3 Hours/Week	Credits: 3
Totat Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 60 + I.A. – 40)

Course Learning Outcomes: This course will enable the students to

- know the concept of set theory.
- know graph theory which helps in decision making in various capacities in organization.
- Enhance the knowledge towards Electronics and computer science.

Unit I:

Basics of Set Theory (14 hrs)

Notation, Inclusion and Equality of sets, The power set, Operation on sets, Venn diagram, Set identities, Ordered pairs and Cartesian products.

Relations and ordering – Properties of binary relation in a set, Relation matrix and Graph of a relation. Equivalence relations, Compatibility relations, composition of Binary relation.

Unit II:

Graph Theory (14 hrs)

Basic definitions, Paths and Connectedness, Matrix representation of Graphs, Trees.

Unit III:

Mathematical Logic (14 hrs)

Statements and Notation, Connectives, Negation, Conjunction, Disjunction,, Statement formulas and Truth tables, Conditional and Bi-conditional, Tautologies, Equivalence of formulas, Tautological Implications.

References:

- 1) Discrete Mathematical Stuctures with Application to computer science by J. P. Tremblay, R. Manohar 3rd Edition – Tata McGraw Hill.
- 2) Discrete Mathematical Structures by B. Kolman, R. C. Busby and S. Rose, 3rd edition.
- 3) Introduction to discrete mathematics by C. L. Liu, McGraw Hill, 2nd edition, 1985.
- 4) Discrete Mathematics by S. A. Witala, McGraw Hill, 1987.

Open Elective
(For Students of all Streams)

MATOET 3.2: Mathematical Aptitude-III	
Teaching Hours : 3 Hours/Week	Credits: 3
Totat Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 60 + I.A. – 40)

Course Learning Outcomes: This course will enable the students to

- have a strong base in the fundamental mathematical concepts.
- grasp the approaches and strategies to solve problems with speed and accuracy
- gain appropriate skills to succeed in preliminary selection process for recruitment

Unit I: Algebraic Expressions, Polynomials, Fundamental operations on Algebraic expressions, Factorisation, Linear equations and problems based on Ages, Quadratic equations. **(14 hrs)**

Unit II:

Mensuration

Area, Volume and Surface area (Cylinder, Cone, Sphere). **(14 hrs)**

Unit III:

Verbal Reasoning

Direction Test, Relation Test, Venn Diagram Analysis Test, Seating puzzles. **(14 hrs)**

Reference Books:

1. R.S. Aggarwal, “Quantitative Aptitude for Competitive Examinations”, Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogita prakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

SEMESTER – IV

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

Course Learning Outcomes: This course will enable the students to

- enhance learning in Analysis and Differential Equations.
- apply the concepts of analysis in practical problems.
- solve various differential equations of practical interest.

UNIT I: Sequences (14 hrs)

Sequence of real numbers – Bounded and unbounded sequences – Infimum and supremum of a sequence – Limit of a sequence – Sum, product and quotient of limits – Standard theorems on limits – Convergent, divergent and oscillatory sequences – Discuss the convergence of $x^n, n^{\frac{1}{n}}, \left(1 + \frac{1}{n}\right)^n$ and standard problems – Monotonic sequences and their properties – Cauchy's general principle of convergence.

UNIT II: Infinite Series (14 hrs)

Infinite series of real numbers – Convergence and Divergence - Oscillation of series – Properties of convergence – Series of positive terms – Geometric series – p – series – Comparison tests – D'Alembert's ratio test – Raabe's test – Cauchy's root test – Leibnitz's test for alternating series.

UNIT III: Linear differential equations (14 hrs)

Cauchy – Euler differential equations, Solution of ordinary second order linear differential equations with variable coefficients by various methods such as:

- (i) When a part of complementary function is given.
- (i) Changing the independent variable.
- (ii) Changing the dependent variable.
- (iii) By method of variation of parameters.
- (iv) Exact method.

Total differential equations - Necessary and sufficient condition for the equation $Pdx + Qdy + Rdz = 0$ to be exact (proof only for the necessary part) – Simultaneous equations of the form $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$.

UNIT IV: Partial differential equations (14 hrs)

Basic concepts – Formation of a partial differential equations by elimination of arbitrary constants and functions – Solution of partial differential equations – Solution by Direct integration, Lagrange's linear equations of the form $Pp + Qq = R$, Standard types of first order non-linear partial differential equations – Charpit's method – Homogenous linear equations with constant coefficient – Rules for finding the complementary function – Rules for finding the particular integral, Method of separation of variables (product method).

Books for References:

1. G. Stephenson – An introduction to Partial Differential Equations.
2. B. S. Grewal – Higher Engineering Mathematics
3. E Kreyszig- Advanced Engineering Mathematics, Wiley India Pvt. Ltd.
4. E D Reinville and P E Bedient – A Short Course in Differential Equations
5. D A Murray – Introductory Course in Differential Equations.
6. G P Simmons – Differential Equations
7. F. Ayres – Differential Equations (Schaum Series)
8. Martin Brown – Application of Differential Equations.
9. M D Raisinghania, Advanced Differential Equations, S Chand and Co. Pvt. Ltd., 2013.
10. S C Malik –Real Analysis
11. Leadership project – Bombay university- Text book of mathematical analysis
12. S S Bali – Real analysis.
13. Richard R Goldberg, Methods of Real Analysis, Indian ed.

PRACTICAL

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

Course Learning Outcomes: This course will enable the students to

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

Practical/Lab Work to be performed in Computer Lab

Suggested Software's: Maxima/Scilab//Python/R.

1. Test for convergence, divergence and oscillation sequences.
2. Test for convergence, divergence and oscillation series.
3. Test the convergence of the series using D'Alembert's ratio test and Raabe's test.
4. Programs on Linear differential equations with variable coefficients.
5. Programs on Partial differential equations.

Open Elective
(For Students of all Streams)

MATOET 4.1: Basics of Number Theory	
Teaching Hours : 3 Hours/Week	Credits: 3
Total Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 60 + I.A. – 40)

Course Learning Outcomes: This course will enable the students to

- Know the expansion of sum of two numbers with positive integral powers.
- General method of proving the statement.
- Learn the concept of Divisibility.
- Learn about prime and composite numbers.
- Learn the concept of congruences and its applications.

Unit I:

Binomial Theorem, Mathematical Induction. **(14 hrs)**

Unit II:

Number System (14 hrs)

Test for Divisibility, Number of divisors and Sum of divisors of a number, Greatest Common Divisor (GCD), Least Common Multiple (LCM), Relation between GCD and LCM, Representation of a GCD as a linear combination of given two numbers.

Unit III:

Congruence (14 hrs)

Basic properties of congruence, Binary and Decimal representations of integers, Linear Congruences and the Chinese Remainder Theorem.

References:

- 1) An Introduction to the Theory of Numbers by Ivan Niven, Herbert S. Zuckerman, Hugh L. Montgomery.
- 2) Elementary Number Theory by David M. Burton.

Open Elective
(For Students of all Streams)

MATOET 4.2: Mathematical Aptitude – IV	
Teaching Hours : 3 Hours/Week	Credits: 3
Totat Teaching Hours: 42 Hours	Max. Marks: 100 (S.A.- 60 + I.A. – 40)

Course Learning Outcomes: This course will enable the students to

- have a strong base in the fundamental mathematical concepts.
- grasp the approaches and strategies to solve problems with speed and accuracy
- gain appropriate skills to succeed in preliminary selection process for recruitment

Unit I: Data interpretation, Data sufficiency. **(14 hrs)**

Unit II: Surds & Indices, Logarithm and its properties. **(14 hrs)**

Unit III:

Non-verbal Reasoning

Series Test, Analogy, Classification, Cube and Dice, Analytical Reasoning. **(14 hrs)**

Reference Books:

1. R.S. Aggarwal, “Quantitative Aptitude for Competitive Examinations”, Revised Edition, S. Chand and Co. Ltd, New Delhi, 2018.
2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
3. Quantitative Aptitude : Numerical Ability (Fully Solved) Objective Questions, Kiran Prakashan, Pratogita prakasan, Kic X, Kiran Prakasan publishers.
4. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw hill publications.

No.AC6/303/2022-23

Dated: 09-10-2023

Notification

Sub: Revised Evaluation Criteria for NSS Activities (II, III & IV Semester)
under SEC with effect from the Academic year 2023-24.


Ref: 1. This office circular No: AC2(S)/151/2020-21 dated 08-08-2023.
2. Decision of BOS in NSS and NCC meeting held on 14-09-2023.
3. Vice Chancellor's approval dated 06-10-2023.

The Board of Studies in NSS and NCC which met on 14-09-2023 has resolved to recommended and approved the revised Evaluation Criteria for NSS Activities (II, III & IV Semester) under SEC with effect from the academic year 2023-24.

Pending approval of the Faculty of Arts and Academic Council meetings the above said syllabus and scheme of examinations are hereby notified.

The syllabus and Scheme of Examinations contents may be downloaded from the University website i.e., www.uni-mysore.ac.in

DRAFT APPROVED BY THE REGISTRAR


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005

To;

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS in NSS and NCC, Manasagangothri, Mysore.
4. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
5. The Director, PMEB, University of Mysore, Mysore.
6. Director, College Development Council, Manasagangothri, Mysore.
7. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
8. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
9. Office Copy.

ಡಾ.ಎಂ.ಬಿ.ಸುರೇಶ್
ತೆಲೆ ಸಂಖ್ಯೆ 9448939516

ಮೈಸೂರು
ರಾಷ್ಟ್ರೀಯ ಸೇವಾ ಯೋಜನೆ
ಸ್ಥಾಪನೆ: 1916



(A Grade in 4th cycle NAAC Re-accreditation)
(NIRF-2023 Ranked 44th in University Category & 71st in Overall Category)
Indira Gandhi National Award winner 2015-16



ಸ್ಥಾಪನೆ : 1969

ಸಂಖ್ಯೆ: ಮೈವಿವಿ/ರಾಸೇಯೋ-5/ 238-A/2022-23

ದಿನಾಂಕ: 14-09-2023

ಗೆ,
ಉಪ ಕುಲಸಚಿವರು(ಸಾಮಾನ್ಯ)
ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
ಮೈಸೂರು.
ಮಾನ್ಯರೆ,

ವಿಷಯ: ಎನ್.ಎಸ್.ಎಸ್. ಮತ್ತು ಎನ್.ಸಿ.ಸಿ. ಅಧ್ಯಯನ ಮಂಡಳಿಯ ನಡವಳಿಯನ್ನು ಸಲ್ಲಿಸುವ ಬಗ್ಗೆ.

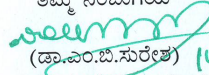
ಉಲ್ಲೇಖ: ಎಸಿ2(ಎಸ್)/151/2020-21 ದಿನಾಂಕ: 06-09-2023

** ** *

ಮೇಲ್ಕಂಡ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ ಹಾಗೂ ಉಲ್ಲೇಖ (1)ರ ರಾಜ್ಯ ಎನ್.ಎಸ್.ಎಸ್. ಕೋಶ
ಬೇಂಗಳೂರು ಇವರ ಸೂಚನೆಯಂತೆ ದಿನಾಂಕ: 14-09-2023ರಂದು ಎನ್.ಎಸ್.ಎಸ್. ಭವನದಲ್ಲಿ ಎನ್.ಇ.ಬಿ.
ಮಾದರಿ 2020ರ ಎನ್.ಎಸ್.ಎಸ್. ಅಧ್ಯಯನ ಮಂಡಳಿಯ (BOS) ಸಭೆಯ ನಡವಳಿಯನ್ನು ಹಾಗೂ
ಎನ್.ಎಸ್.ಎಸ್.ನ 2,3 ಮತ್ತು 4ನೇ ಸೆಮಿಸ್ಟರ್‌ಗಳ ಪಠ್ಯಕ್ರಮವನ್ನು ಸಿದ್ಧಪಡಿಸಿ ತಮ್ಮ ಮುಂದಿನ ಸೂಕ್ತ ಕ್ರಮಕ್ಕಾಗಿ
ಸಲ್ಲಿಸಲಾಗಿದೆ.

ವಂದನೆಗಳೊಂದಿಗೆ.

ತಮ್ಮ ನಂಬುಗೆಯ


(ಡಾ.ಎಂ.ಬಿ.ಸುರೇಶ್)

14-09-23

ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜನಾಧಿಕಾರಿಗಳು

ಪ್ರತಿ:

1. ಕಚೇರಿ ಪ್ರತಿ

ರಾ.ಸೇ.ಯೋ. ಕಾರ್ಯಕ್ರಮ ಸಂಯೋಜನಾಧಿಕಾರಿಗಳ ಕಚೇರಿ, ಎನ್.ಎಸ್.ಎಸ್. ಭವನ, ಸರಸ್ವತಿಪುರಂ, ಮೈಸೂರು-09
ದೂರವಾಣಿ: 0821-2419326, www.uni-mysore.ac.in/NSS E- mail ID: nssuommysore@gmail.com

Follow us on: Twitter- @NssUom, Youtube- <https://tinyurl.com/2b47m4a>

D:/D

“ಪ್ಲಾಸ್ಟಿಕ್ ತ್ಯಜಿಸಿ ಪರಿಸರ ಉಳಿಸಿ”

Dr. M B Suresha
Mobile: 9448939516




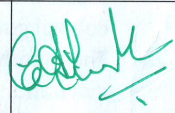
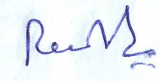
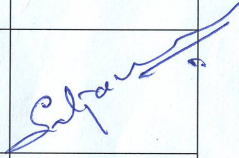
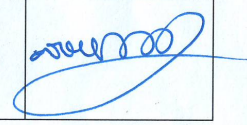
(Re-accredited by NAAC at "A" Grade with a CGPA of 3.47)
(NIRF-2021 Ranked 19 in University Category & 34 in Overall Category)
Indira Gandhi National Award winner 2015-16

PROCEEDINGS OF THE BOARD OF STUDIES IN NSS & NCC (CB)

The national service scheme board of studies, meeting convened on 14-09-2023 at NSS Bhavan, Sahukar channaiah road, Saraswathipuram, Mysuru at 3:00PM and discussed on the following agenda points.

Agenda:

1. Modification of credits patterns as per the guidelines giving by the state higher education council.
2. Any other matters.

Sl.No	BOARD OF STUDIES COMMITTEE	Signature
1.	Dr.Chandrashekara B Co-ordinator NSS-ETI, University of Mysore, Mysuru.	Member 
2.	Principal Maharaja's college, Mysuru.	Member 
3.	Dr.Ramadasa Reddy S .G NSS Programme Officer, Government First Grade College, Kuvempunagar, Mysuru.	Member 
4.	Prof.Sathyanarayan Former Syndicate Member Universtiy of Mysore, Mysuru	Member 
5.	Dr.M.B.Suresha Programme Co-ordinator, NSS Universtiy of Mysore, Mysuru	Chairman 

P.T.O., →

Programme Co-ordinator, N S S Bhavan, Sahukara Chennaiah Road Saraswathipuram, Mysuru-09

Telephone: 0821-2419326, www.uni-mysore.ac.in/NSS E- mail ID: nssuommysore@gmail.com

Follow us on: Twitter- @NssUom, Youtube- <https://tinyurl.com/2b47rm4a>

Absent Members		
1.	Prof.Manomani. M.S, NSS Programme Officer, Government Home Science College, Hassan	Member
2.	Smt.Hemalatha.B N, Asst.Professor NSS Programme Officer De Paul First Grade College, Belogala, Sri Rangapatanna Tq, Mandya.	Member
3.	Dr.Satisha Bhat Shankara, NSS Programme Officer Yuvaraja's College, Mysuru	Member

The NSS Co-Ordinator & Chairman of the BOS NSS, University of Mysore
Dr.M.B.Suresha welcomed all the members of the Board to the meeting and explained the agenda of the meeting.

1. The committee, after detailed discussion on the existing syllabus and its modify the credit from the current 1(one) credit to 2(two) credits as per the higher education council guidelines for all the programmes from the current academic year.
2. The members of the board have recommended for the modification in marks in evaluation scheme. However, it is resolved to continue the earlier Assessment Criteria.

The committee has resolved to increase the total marks from 25 to 50.

The meeting has ended with the formal vote of thanks of the co-ordinator.

UNIVERSITY OF MYSORE

National Service Scheme

Structure

&

Detailed

Syllabus

**Under
Skill Enhancement Courses (SEC)
Value Based Programme**

Effective from 2021-2022

Revised 2023-2024

Annexure-1

Programme Structure of National Service Scheme (NSS) under Skill Enhancement Value Based Course (Modified 2023-24)

Semester	Course Type	Course Title	Course Credits L-T-P	Hours				Evaluation		
				Lecture	Tutorial	Practical	Total	C1 (10 Marks)	C2 (10 Marks)	C3 (30 Marks)
II	SECNSS2.1	Introduction to National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
III	SECNSS3.1	Volunteerism leadership development through National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
IV	SECNSS4.1	Management of National Service Scheme & Disaster management *Project	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission, Presentation and Viva

Annexure-1

Programme Structure of National Service Scheme (NSS) under Skill Enhancement Value Based Course (Old 2022-23)

Semester	Course Type	Course Title	Course Credits L-T-P	Hours				Evaluation		
				Lecture	Tutorial	Practical	Total	C1 (10 Marks)	C2 (10 Marks)	C3 (30 Marks)
II	SECNSS2.1	Introduction to National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
III	SECNSS3.1	Volunteerism and National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
IV	SECNSS4.1	Management of National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
V	SECNSS5.1	Value and Leadership Development through National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission, Presentation and Viva

Syllabus & Regulations

Skill Enhancement courses are to promote skills pertaining to a particular field of study. The purpose of these courses is to provide students life-skills in hands-on mode so as to increase their employability/ Self-employment. The objective is to integrate discipline related skills in a holistic manner with general education. These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

These activities help in character building, spiritual growth, physical growth, etc. They facilitate development of various domains of mind and personality such as intellectual, emotional, social, moral and aesthetic developments. Creativity, Enthusiasm, and Positive thinking are some of the facets of personality development and the outcomes of these activities.

Eligibility for opting NSS as SEC value Based:

Candidates who have joined to any stream of degree are eligible to opt NSS Programme in Second semester under Skill Enhancement (Value Based) Course (SEC)-. However, if a candidate wants to perceive NSS as Skill Enhancement (Value based) course in subsequent semesters it is mandatory that the candidate should have studied NSS at Second semester which is foundation course of this Programme.

Scheme and Duration of the Course:

National Service Scheme under New education policy is implemented as Skill Enhancement Value Based Course from Second semester to fourth semester for all graduation Programs consists of 3 semesters in 2 academic years. The course shall be implemented exclusively as an independent NSS unit without merging the Grant in Aid NSS units which are already in Operation. Both Grant in aid Units and Units Implemented under SEC in Colleges shall exist and shall function independently with a separate officer or with the same officer.

Duration of the Course:

The duration of the National service Scheme shall extend over 3 semesters (two academic years) of 16 weeks or more, each with a maximum of 32 actual working hours of instruction/ field Activities in each semester.

Course pattern:

The number of credits per semester is one(02) which is Practical or field activity based rather than class room teaching .The credits shall be based on the number of instructional hours per week, generally 1 credit per hour of instruction in theory and 1 credit for 2 hours of practical or project work or internship per week.

Medium of instruction:

The medium of instruction shall be Kannada/English.

Eligibility for a Teacher:

The NSS is Implemented in Colleges in two ways, i.e., Grant –in Aid Units and Self Finance Units.

In both grant in Aid Unit and self-finance unit (Maximum. Volunteers strength in a unit is 100) there will be an Officer in charge, who is normally selected among the Teaching faculty of the College by the Principal.

Similarly, an officer in charge for National Service scheme (NSS) implemented under SEC as per NEP 2020 shall be appointed by the Principal and such officers should undergo for Training/ Orientation organized by NSS-ETI for a period of 7 days within a period of Six months from the date of his/her appointment as NSS officer in the College. The appointment intimation should be furnished to the NSS Coordinator, University of Mysore for information and such Units shall be treated as self- finance NSS Units.

The work load:

As per the guide lines of higher Education Council, Karnataka State, 4 hours/ week work is assigned for the activities of NSS for each semester, which is more of Field based and Practical oriented activities. Hence, for effective implementation of the programme the officer in charge involvement is very crucial. So, 4 hours/ week per semester work load which is devoted in NSS shall be counted with their parent subject workload and by that they are entitled to get 2 hours/ week per semester workload relaxation from their parental subject workload.

Attendance:

The course shall be treated as an independent unit for the purpose of attendance. A student shall attend a minimum of 75% of the total instruction hours in a course including assignments / tests / quiz and Seminars in each semester. The student who fails to secure 75% attendance in a course shall be required to repeat the course.

Internal Assessment:

The Skill Enhancement course shall have internal assessment for 50 marks per semester. As this course is non-examination course, the evaluation of each student is based on Internal Assessment which shall be carried out continuously throughout the semester. Each student shall be assessed at 3 stages in each semester i.e, C1, C2, C3. C1 at the end of 8th week, C2 by the end of 14th week and C3 at the end of 16th week for 10, 10 and 30 Marks respectively. The C1 and C2 internal assessments (Ten Marks each) shall be awarded on the basis of Assignment / Test / Quiz and C3 Internal assessment (Thirty marks) shall be awarded on the basis of Participation (10 marks) Leadership & Responsibility (10 marks) and Report submission (10 marks). However, for C3 assessment in 4th semester each candidate shall be evaluated by the criteria of Project submission, presentation and Viva-voce.

The internal assessment marks shall be notified on the department / college notice board for the information of the students and it shall be communicated to the Registrar (Evaluation) within a stipulated time prescribed by the university.

The outline for continuous assessment activities for C1, C2 and C3 components shall be as under

Semester	C1 Component	C2 Component	C3 component	Total
II, III and IV Semester	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission • Project Submission • Presentation -10 marks & Viva-voce -5 marks 	
	10	10	30	50 marks

**Programme Structure of National Service Scheme (NSS)
Under Skill Enhancement Value Based Course**

Semester	Course Type	Course Title	Course Credits L-T-P	Hours				Evaluation		
				Lecture	Tutorial	Practical	Total	C1 (10 Marks)	C2 (10 Marks)	C3 (30 Marks)
II	SECNSS2.1	Introduction to National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
III	SECNSS3.1	Volunteerism and National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission
IV	SECNSS4.1	Management of National Service Scheme	0-0-2	0	10	22	32	Assignment / Test / Quiz	Assignment / Test / Quiz	<ul style="list-style-type: none"> • Participation • Leadership & Responsibility • Report Submission Report • Submission, Presentation and Viva

University of Mysore
National Service Scheme
Syllabus

Semester: II	
Course Code: SECNSS2.1	Course Title: Introduction to National Service Scheme
Course Credits: 02	Hours / week : 02
Total contact hours: 32	Evaluation : Max Marks 50
<p>Course Objectives:</p> <ul style="list-style-type: none"> • To understand the concept of Youth • To understand the importance of youth population in Nation Building • To understand the nature and Growth of National Service Scheme in India • To understand aims, objectives, Logo, Emblem, and Organizational structure of NSS. 	
<p>Course Outcomes: At the end of this course students will be able to :</p> <ul style="list-style-type: none"> • Describe the concept of Youth and compare the international definitions of the term Youth. • Students will be able to appreciate our demographic advantage and its role in nation building. • Know the growth and evolution of NSS and its role in Nation building through community service. • Visualize the signs, symbols, logo of NSS and understand their broader meaning. 	

Course Contents	Hours
Unit – I : Youth population in India and its characteristics	
Introduction to India: Physical, Socio-Economic and Demographic Background, Study on Indian Population Composition (Age composition), Youth composition, Youth policy, Importance of Youth Policy, Youth population in India, NSS as a Youth Organization.	04
Unit- II : Fundamentals of NSS	
Introduction to NSS, Origin of NSS, Aims and Objectives of NSS, NSS Motto, NSS Emblem, NSS Badge, NSS Day.	03

Unit – III NSS Songs	
NSS Anthem (Hindi & Kannada), National Integration song, <ul style="list-style-type: none"> • RastriyasevayojaneMadiharu. • UtehsamajkeliyeUtehUteh. • NavellaruOndagiBalonaBanni. • Hum Sab Mil karDeshkaApani. 	03
Unit –IV Activity Based Programmes	
A. Campus Activities:	
Shramadhan – Plantation, Cleaning, Watering, Weeding, Any other activities. Awareness Programmes – Seminar, Workshops, Celebration of National and International days, Personality Development Programmes, Group Activities, etc.,	10
B : Off Campus Activities:	
Rally, Jatha, Visit to Adopted villages, Swatchatha 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).	12

References:

- a) Prof. B.K. Shivanna, “National Service Scheme” Printing Press KSOU, Mysore 2011
- 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) Dikxit. 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, NewDelhi
- 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., NewDelhi

Evaluation Scheme

Assessment Criteria	Marks
C1 – Unit 1, 2 & 3 Assignment / Test / Quiz	10
C2 – Campus / off campus Activities Assignment / Test / Quiz	10
C3 - Participation – 10 marks Leadership & Responsibility – 10 marks Report Submission – 10 marks	30
Total	50

**University of Mysore
National Service Scheme**

Syllabus

Semester: III	
Course Code: SECNSS3.1	Course Title: Volunteerism and National Service Scheme
Course Credits: 02	Hours / week : 02
Total contact hours: 32	Evaluation : Max Marks 50
<p>Course Objectives:</p> <ul style="list-style-type: none"> • To understand the concept of Volunteerism • To motivate the students to take part in voluntary community activities. • To understand the organizational structure of National Service Scheme at different levels 	
<p>Course Outcomes: At the end of this course students will be able to :</p> <ul style="list-style-type: none"> • Appreciate the spirit and purpose of Volunteerism. • Know the organizational structure and its functions at national to Institutional level. • Learn the skills of critical thinking and Decision making. • Appreciate the culture of Shramadhan and its benefits through working as a team or group. 	

Course Contents	Hours
Unit – I :	
<p>Volunteerism and NSS :Volunteerism– Meaning, definition, basic qualities of volunteers, need of volunteerism for National development.</p> <p>Organization structure of NSS- National level, State level, University and Institutional Level.</p>	05
Unit- II	
<p>Leadership & Personality development :Meaning, definition, qualities and characteristics of a Leader. Meaning of personality, Dimensions of personality. Personality and Leadership nexus.</p> <p>Universal Human Values and ethics for youths</p>	05

Activity Based Programmes	
UNIT-III A. Campus Activities: Shramadhan – plantation, cleaning, watering, weeding, any other activities. Awareness Programmes – Seminar, workshops, celebration of National and International days, Personality Development programmes, group activities, etc.,	10
UNIT-IV B. Off Campus Activities: Rally, Jatha, Visit to adopted villages, Swatchatha programme, Ancient monuments and heritage, Socio economic survey of village/slum, Nature camp, Environmental education, JOB Card (APL, BPL, Social security schemes), Women Empowerment Programme, Health camps, Blood group awareness and Blood donation, Legal programme, Literacy programme, Water purification, One day Special Camp in a village (preferably in adopted village).	12

References:

- a) 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)
- b) Chattarjee, B., Social service opportunities for students in Slum Areas (reprint : Delhi : Delhi School of Social Work, University of Delhi 1973)
- c) NSS Manual 2006, Ministry of youth Services and Sports, Govt. of India, New Delhi.
- d) Afsal Mohammad B, 2020, An Introduction to Volunteerism in India, independently published, ISBN-13 : 979-8691101335.
- e) Femida Handy, MeenazKassam, Sharjah Jillian Ingold and others 2020, From Seva to Cyberspace: The Many Faces of Volunteering in India.

Evaluation Scheme

Assessment Criteria	Marks
C1 – Unit 1 & 2	10
Assignment / Test / Quiz	
C2 – Campus / off campus Activities	10
Assignment / Test / Quiz	
C3 - Participation – 10 marks	30
Leadership & Responsibility – 10 marks	
Report Submission – 10 marks	
Total	50

**University of Mysore
National Service Scheme**

Syllabus

Semester: IV	
Course Code: SECNSS4.1	Course Title: Management of National Service Scheme
Course Credits: 02	Hours / week : 02
Total contact hours: 32	Evaluation : Max Marks 50
<p>Course Objectives:</p> <ul style="list-style-type: none"> • To understand the concept of National Service Scheme • To understand the nature and purpose of Advisory Committee • To inform students about the benefits and incentives in NSS 	
<p>Course Outcomes: At the end of the course the student is able to</p> <ul style="list-style-type: none"> • Know the importance and role of Advisory committee in effective programme implementation. • Know the responsibility of both student volunteer and officer in-charge. • Communicate effectively with the community and with the officials. • Know various welfare schemes of the government and avenues to cooperate with them. 	

Course Contents	Hours
Unit – I	
<p>Management of NSS at unit level :Advisory committee, roles and responsibilities. Roles and responsibilities of a programme officer, opportunities for volunteers.</p> <p>Skills for NSS volunteers: Soft Skills for NSS Volunteers – Communication skills, Public speaking skills, Body Language, Content writing, Resume writing. Life Skills – problem solving, Empathy, coping with emotions, self-Awareness and inter personal skills.</p>	05

UNIT-II	
Youth and Disaster Management- Meaning and Types of Disasters – Natural and Man Made disasters, preparedness, Disaster Risk reduction: Preparedness, Mitigation, Response, Relief, Rehabilitation, Reconstruction.	05
Activity Based Programmes: UNIT-III *Project : <ul style="list-style-type: none"> • Project work is mandatory for all the students in IVth semester. • They can carry out project work under the supervision of the teacher in-charge of NSS and at the end of the semester a project report shall be presented and viva voce shall be conducted. • The Project work can be carried out independently or in a group. • The project work shall be community based and selected preferably from the adopted villages/ slums/ neighborhoods. Project Submission and Presentation VIVA-VOCE - A. Campus Activities: Shramadhan – plantation, cleaning, watering, weeding, any other activities. Awareness Programmes – Seminar, workshops, celebration of National and International days, Personality Development programmes, group activities, etc.,	12
UNIT-IV B. Off Campus Activities: Rally, Jatha, Visit to adopted villages, Swatchatha programme, Ancient monuments and heritage, Socio economic survey of village/slum, Nature camp, Environmental education, JOB Card (APL, BPL, Social security schemes), Women Empowerment Programme, Health camps, Blood group awareness and Blood donation, Legal programme, Literacy programme, Water purification, One day Special Camp in a village (preferably in adopted village).	10

References

- a) Prof. B.K. Shivanna, “National Service Scheme” Printing Press KSOU, Mysore 2011
- b) Madhu Ahuja, 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) Dikxit. 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) Prashanth Sharma 2021 Soft Skills: Personality Development for Life Success.BPB Publication, ISBN-13 : 978-9391392093.
- h) Dr.RajivkumarJain, Dr.Usha Jain 2016, Life Skills: A Guide to Steer Life, Vayu Education Of India.

References for Unit II & Unit IV

- i) Arnold, K. (2018). What is R.E.S.P.E.C.T. When it comes to teamwork? Available at:<https://www.extraordinaryteam.com/what-is-r-e-s-p-e-c-t-when-it-comes-to-teamwork/> (Accessed on 2018-08-21).
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Evaluation Scheme

Assessment Criteria		Marks
C1	Unit 1 & 2 Assignment / Test / Quiz	10
C2	Campus / off campus Activities Assignment / Test / Quiz	10
C3	Participation – 05 marks	15
	Leadership & Responsibility – 05 marks	
	Report Submission – 05 marks	
	Project	15
Total		50

No.AC2(S)/151/2020-21

Dated:10.10.2022

Notification

Sub:- Syllabus and Examination Pattern of Physics (UG) (III & IV Semester) with effective from the Academic year 2022-23 as per NEP-2020.



- Ref:-**
1. Decision of Board of Studies in of Physics (UG) Meeting held on 02-09-2022.
 2. Decision of the Faculty of Science & Technology Meeting held on 15-09-2022.
 3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in Physics (UG) which met on 02-09-2022 has recommended & approved the syllabus and pattern of Examination of Physics Course (III & IV Semester) with effective from the Academic year 2022-23 as per NEP - 2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively has also approved the above said syllabus and hence it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Draft Approved by the Registrar


Deputy Registrar (Academic)
Deputy Registrar (Academic)
University of Mysore
Mysore-570 005 

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Physics, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Earth Science, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.

Detailed Syllabus of III Semester Physics

Program Outcomes:	
1.	Disciplinary knowledge
2.	Communication Skills
3.	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
4.	Problem-solving
5.	Research-related skills
6.	Cooperation/ Teamwork/ Leadership readiness/Qualities
7.	Information/ Digital literacy/Modern Tool Usage
8.	Environment and Sustainability
9.	Multicultural competence
10.	Multi-Disciplinary
11.	Moral and ethical awareness/Reasoning
12.	Lifelong learning / Self Directed Learning

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

Prerequisites	
i.	Fundamentals of waves

Course Learning Outcomes

At the end of the course students will be able to:	
i.	Identify different types of waves by looking into their characteristics.
ii.	Formulate a wave equation and obtain the expression for different parameters associated with waves.
iii.	Explain and give a mathematical treatment of the superposition of waves under different conditions, such as, when they overlap linearly and perpendicularly with equal or different frequencies and equal or different phases.
iv.	Describe the formation of standing waves and how the energy is transferred along the standing wave in different applications, and mathematically model in the case of stretched string and vibration of a rod.
v.	Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.
vi.	Describe the different parameters that affect the acoustics in a building, measure it and control it.
vii.	Give the different models of light propagation and phenomenon associated and measure the parameters like the wavelength of light using experiments like Michelson interferometer, interference and thin films.
viii.	Explain diffraction due to different objects like singles slit, two slits, diffraction of grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.
ix.	Explain the polarization of light and obtain how the polarization occurs due to quarter wave plates, half wave plates, and through the optical activity of a medium.

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

Course Outcomes / Program Outcomes		1	2	3	4	5	6	7	8	9	10	11	12
i.	Identify different types of waves by looking into their characteristics.	X	X	X	X	X	X					X	X
ii.	Formulate a wave equation and obtain the expression for different parameters associated with waves.	X	X	X	X	X	X					X	X
iii.	Explain and give a mathematical treatment of the superposition of waves under different conditions such as when they overlap linearly and perpendicularly	X	X	X	X	X	X					X	X

	with equal or different frequencies and equal or different phases.												
iv.	Describe the formation of standing waves and how the energy is transferred along the standing wave in different applications, and mathematically model in the case of stretched string and vibration of a rod.	X	X	X	X	X	X					X	X
v.	Give an analytical treatment of resonance in the case of open and closed pipes in general and Helmholtz resonators in particular.	X	X	X	X	X	X					X	X
vi.	Describe the different parameters that affect the acoustics in a building, measure it and control it.	X	X	X	X	X	X					X	X
vii.	Give the different models of light propagation and phenomenon associated and measure the parameters like the wavelength of light using experiments like Michelson interferometer, interference and thin films.	X	X	X	X	X	X					X	X
viii.	Explain diffraction due to different objects like singles slit, two slits, diffraction grating, oblique incidence, circular aperture and give the theory and experimental setup for the same.	X	X	X	X	X	X					X	X
ix.	Explain the polarization of light and obtain how the polarization occurs due to quarter wave plates, half wave plates, and through the optical activity of a medium.	X	X	X	X	X	X					X	X

Wave Motion and Optics

Unit – 1 - Waves and Superposition of Harmonic Waves

The Portion to be Covered

Waves: Plane and Spherical Waves. Longitudinal and Transverse Waves. Characteristics of wave motion, Plane Progressive (Travelling) Wave and its equation, Wave Equation – Differential form (derivation). Particle and Wave Velocities: Relation between them, Energy Transport – Expression for intensity of progressive wave, Newton’s Formula for Velocity of Sound. Laplace’s Correction (Derivation). Brief account of Ripple and Gravity Waves. **(Text Book : 1-4) (5 Hours)**

Superposition of Harmonic Waves : Linearity and Superposition Principle. Superposition of two collinear oscillations having (1) equal frequencies and (2) different frequencies (Beats) – Analytical treatment. Superposition of two perpendicular Harmonic Oscillations: Lissajous Figures with equal and unequal frequency- Analytical treatment. Uses of Lissajous’ figures. **(Text Book : 1-4) (6 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO’s	BL	CO	PO
i.	Explain the difference between plane and spherical waves, longitudinal and transverse waves and give their characteristics.	L2	1	1-6, 11-12
ii.	Write down an equation for the progressive wave in its differential form.	L2	1	1-6, 11-12
iii.	Obtain the relation between particle and wave velocity.	L2	1	1-6, 11-12
iv.	Obtain an expression for intensity of progressive waves.	L2	1	1-6, 11-12
v.	Obtain Newton's formula for the velocity of sound and discuss the factors for which sound velocity is dependent.	L2	2	1-6, 11-12
vi.	Apply the Laplace’s correction to the equation of motion of a progressive wave.	L2	2	1-6, 11-12
vii.	With examples explain ripple and gravity waves.	L1	2	1-6, 11-12
viii.	Give the theory of superposition of two linear waves having equal frequencies and different frequencies.	L2	3	1-6, 11-12
ix.	Discuss the formation of different Lissajous figures under different conditions of amplitude and frequency when they superimpose perpendicularly.	L2	3	1-6, 11-12
x.	Give some applications of an Lissajous figures.	L1	3	1-6, 11-12
xi.	Higher order problems.	L3	1,2,3	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

Activity No. 1	<p>We know that sound is produced because of vibration. Look into at least 10 musical instruments and identify the regions of vibrations that produces the sound and those parts which enhances the sound because of reverberation.</p> <ol style="list-style-type: none"> 1. Identify one common element in all of these. 2. Identify equipment which creates beats and try to explain the underlying basic principles. Demonstrate the examples of beats using two tuning forks. 3. Identify what will happen when you drop a stone in a standing water, and when your drop two stones side by side. 4. Make your observations sketch them and comment on it in a report.
Activity No. 2	<p>Draw two sine waves (Amplitude vs time) one shifted with other in phase. Identity where the resonation occurs for each phase shift. Plot phase vs time taken for resonance.</p>
Activity No. 3	<p>Take smooth sand, place a pointed edged pen vertically on the sand. To the mid of the pen, connect two perpendicular threads. Pull these perpendicular threads by varying the forces and timings. Note down the different shapes produced on the sand. Try to interpret the shapes. Make a report of it</p>
Activity No. 4	<p>Hang a pot with sand, which has a hole in the bottom. Gently pull the pot on one side and observe the pattern formed by the sand on the floor. Report the observations.</p>
Activity No. 5	<p>Design a coupled pendulum. Study the impact of the motion of one pendulum over the other pendulum by varying the length, direction of the motion of one pendulum and mass of pendulum and observe the resultant changes. Trace the path of the bobs and make a report.</p>
Activity No. 6	<p>Note for the teachers for the activity: Make 3 groups among students and assign each group the activity of drawing one of the 3 graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation,</p>

	<p>teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <ol style="list-style-type: none"> 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. <p>Activity: Take a stretched spring. Stretch it across two edges. Put a weight on the string, pluck it and measure the amplitude of the vibration. All group will measure the total damping time of oscillating spring. (Using mobile or scale) And plot a graph of the-</p> <ol style="list-style-type: none"> 1. Varying load on the spring and amplitude at the centre. 2. Take another weight and put that in another place and measure the amplitude of vibration at the centre. 3. Vary the load in the centre of the spring and measure the amplitude at the centre.
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Wave Motion and Optics

Unit – 2 - Standing Waves and Acoustics

The Portion to be Covered

Standing Waves : Velocity of transverse waves along a stretched string (derivation), Standing (Stationary) Waves in a String - Fixed and Free Ends (qualitative). Theory of Normal modes of vibration in a stretched string, Energy density and energy transport of a transverse wave along a stretched string. Vibrations in rods – longitudinal and transverse modes (qualitative). Velocity of Longitudinal Waves in gases (derivation). Normal Modes of vibrations in Open and Closed Pipes – Analytical treatment. Concept of Resonance, Theory of Helmholtz resonator. **(Text Book : 1-4) (8 Hours)**

Acoustics: Absorption coefficient, Reverberation and Reverberation time, Sabine’s Reverberation formula (derivation), Factors affecting acoustics in buildings, Requisites for good acoustics. Acoustic measurements – intensity and pressure levels. **(Text Book : 1-4) (3 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Discuss the Transverse waves produced in stretched string and obtain the expression for the same.	L2	3	1-6, 11-12
ii.	Give a qualitative treatment of vibration of a string when it's both ends are fixed and free.	L2	3	1-6, 11-12

iii.	Explain normal modes of a stretched string. Obtain an expression for the energy density and discuss how this energy is transported along a stretched string.	L2	3	1-6, 11-12
iv.	Quantitatively bring about the mode of vibrations created in a rod.	L2	4	1-6, 11-12
v.	Explain types of waves that are produced in gas. Obtain an expression for the same.	L2	4	1-6, 11-12
vi.	With an analytical treatment explain the concept of resonance using the normal modes of vibrations of open and closed pipes.	L2	5	1-6, 11-12
vii.	Give the theory of Helmholtz resonator and explain how it is used to calculate some parameters of the way the standing waves are set in there.	L2	5	1-6, 11-12
viii.	Define Reverberation, Reverberation time and absorption coefficient of a material.	L1	5	1-6, 11-12
ix.	Obtain Sabine's Reverberation formula and discuss what are the factors on which the Reverberation time depends on?	L2	5	1-6, 11-12
x.	List out which are different parameters within a building which effects the acoustics.	L1	6	1-6, 11-12
xi.	Explain what good acoustics of a building are and how acoustics is measured in terms of intensity and pressure inside a building.	L2	6	1-6, 11-12
xii.	Higher order problems.	L3	4,5,6	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Formative Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc.

Suggested Activities (2 Hours)

Activity No. 7	<p>List different phenomenon where standing waves are found in nature. Identify the phenomena and reason for standing waves. Also identify the standing waves in musical instruments. Make a report.</p>
Activity No. 8	<ol style="list-style-type: none"> 1. Go to 5 different newly constructed houses when they are not occupied and when they are occupied. Make your observations on sound profile on each room. Give the reasons. Make a report. 2. Visit three very good auditoriums, list out different ways in which the acoustic arrangements have been done (as decoration and Civil works). Look for the reasons in Google and identify which is acoustically the best auditorium among the three you visited. Make a report.
Activity No. 9	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <ol style="list-style-type: none"> 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study. <p>Activity: Take a bowl of different liquids (water, milk, kerosene, salt water, Potassium Permanganate (KMNO₄) solution. Place a small non oily floating material (ex: thin plastic) on the surface of the liquid. Drop a marble on the liquid at the centre of the bowl. Repeat the experiment by dropping the marble from the different heights. Plot a graph of-</p> <ol style="list-style-type: none"> 1. Height v/s time of oscillation 2. Weight of the marble v/s time of oscillation
Activity No. 10	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <ol style="list-style-type: none"> 1. The first slide will explain the process of doing the experiment. 2. In the second slide. Students will show the graph of measurement. 3. In the third slide, they will list three observations from that study.

	<p>Activity: Take two marble of same weight. Drop both the marbles on the surface of the liquid from some height. With the help of the mobile take the picture and measure the position of interface of two wave fronts formed in the liquid. Plot graphs for different activities by doing the following activities.</p> <ol style="list-style-type: none"> 1. By dropping two marbles of same weight from different heights. 2. By dropping two marbles of different weight from the same height
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Wave Motion and Optics

Unit – 3 - Nature of light and Interference

The Portion to be Covered

Nature of light : To Determine wavelength of light, distances and shapes using Michelson interferometer. The corpuscular model of light-The wave model - Maxwells electromagnetic waves-Wave Particle Duality (**Text Book No 5; Sections 2.1 to 2.4 and 2.8**) (**2 Hours**)

Interference of light by division of wave front: Huygen’s theory-Concept of wave-front-Interference pattern produced on the surface of water-Coherence-Interference of light waves by division of wave-front- Young’s double slit experiment- derivation of expression for fringe width-Fresnel Biprism-Interference with white light (Text Book No 5; Sections 12.1 to 12.2, 14.1 to 14.5, 14.7 to 14.9) (**4 Hours**)

Interference of light by division of amplitude: Interference by division of amplitude-Interference by a plane parallel film illuminated by a plane wave-Interference by a film with two non-parallel reflecting surfaces- color of thin films—Newton’s rings-(Reflected light)-Michelson Interferometer-Determination of wavelength of light* (Text Book No 5; Sections 15.1 to 15.2, 15.8 to 15.11) (**5 Hours**)

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO’s	BL	CO	PO
i.	Explain using Michelson interferometer how to determine the wavelength of light.	L2	7	1-6, 11-12
ii.	Give an account of the different possible shapes that are obtained in Michelson interferometer experiment and their relevance.	L2	7	1-6, 11-12
iii.	Discuss the wave model and the Corpuscular model of light.	L2	7	1-6, 11-12
iv.	Explain Maxwells electromagnetic waves.	L2	7	1-6, 11-12
v.	Give an account of the phenomenon of wave-particle duality.	L1	7	1-6, 11-12
vi.	Give the Huygen theory of wave-front.	L1	7	1-6, 11-12
vii.	Define Interference. Give some examples of Interference.	L1	7	1-6, 11-12

viii.	Give the theory of interference due to two coherent sources of light and obtain an expression for the wavelength of monochromatic source of light (Young's double slit experiment)	L2	7	1-6, 11-12
ix.	Explain how using personal biprism, a monochromatic coherent source of light are obtained. Using this experimental setup explain how the wavelength of monochromatic sources of light is determined.	L2	7	1-6, 11-12
x.	Give the theory of interference due to division of amplitude by parallel and non-parallel plates.	L1	7	1-6, 11-12
xi.	Explain how Newton's rings are obtained and discuss how the wavelength of light is determined using this experiment.	L2	7	1-6, 11-12
xii.	Higher order problems.	L3	7	1-6, 11-12
Teaching and Learning Methodology				
Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.				
Formative Assessment Techniques				
One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc				

Suggested Activities (2 Hours)

Activity No. 11

In the table given below explore which phenomenon can be explained by what and Make a report.

Sl No	Phenomenon	Particle of Light	Wave Nature	Dual Nature
	Pinhole camera			
1	Formation of images on lenses			
2	Formation of images on mirror			
3	Interference			
4	Polarization			
5	Diffraction due to single slit			
6	Black body radiation			
7	Photoelectric effect			
8	De-Broglie hypothesis			
9	Devison & Germer Experiment			

Activity No. 12

Why colour strips are seen in paddles on roads in rainy seasons try to simulate the same. Give the reasons. Make a report.

Activity No. 13

Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.

1. The first slide will explain the process of doing the experiment.
2. In the second slide. Students will show the graph of measurement.
3. In the third slide, they will list three observations from that study.

Activity: Take a bowl of different liquids (water, milk, kerosene, salt water, Potassium Permanganate (KMNO₄) solution. Place a small non oily floating material (ex: thin plastic) on the surface of the liquid. Drop two marbles of same weight (mass) from the same height on to the surface of the water but at the different time intervals. Plot graph for the different observations.

For teachers: Demonstrate the formation of Lissajous Figure using a CRO. Give different shapes of Lissajous Figure with varying frequency and amplitude. Ask the students to comment on the observations.

Wave Motion and Optics

Unit – 4 - Diffraction and Polarisation

The Portion to be Covered

Fraunhofer diffraction : Introduction- Fraunhofer diffraction- Single slit diffraction pattern-position of Maxima and Minima (Qualitative arguments)- Two slit diffraction pattern-position of Maxima and minima- Theory of plane diffraction Grating-Grating spectrum- normal and oblique incidence-Resolving power and dispersive power of a grating Single slit; Double Slit. Multiple slits & Diffraction grating. (Text Book No 5; Sections 18.1 to 18.2, 18.6,18.8 to 18.9) **(4 Hours)**

Fresnel Diffraction- Fresnel half period zones-Diffraction by a circular aperture-diffraction by an opaque disc-The zone plate -comparison between zone plate and convex lens. (Text Book No 5; Sections 20.1 to 20.3) **(3 Hours)**

Polarisation: Introduction-Production of polarized light- The wire Grid polarizer and Polaroid-Superposition of two disturbances-Phenomenon of double refraction-Quarter wave plates and half wave plates- Analysis of polarized light-optical activity. (Text Book No 5; Sections 22.1, 22.3,22.4,22.6 to 22.8) **(4 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Define Fraunhofer diffraction.	L2	8	1-6, 11-12
ii.	Give a qualitative treatment of single slit/diffraction double slit diffraction.	L2	8	1-6, 11-12
iii.	Explain the theory of diffraction due to grating and the normal and oblique incidence.	L2	8	1-6, 11-12
iv.	Explain how the resolving power of a grating depends of the number of slits used.	L2	8	1-6, 11-12
v.	Give the theory of Fersnel half period zones.	L2	8	1-6, 11-12
vi.	Discuss zone plates with respect to convex lenses.	L2	8	1-6, 11-12
vii.	Explain optical polarization and polaroids.	L2	9	1-6, 11-12
viii.	Give different types of polaroids.	L2	9	1-6, 11-12
ix.	Give the theory of phenomenon of double refraction and explain what are ordinary and extraordinary rays.	L2	9	1-6, 11-12
x.	Give the theory of quarter wave plates and half wave plates.	L2	9	1-6, 11-12
xi.	Explain optical activity with theory. Give an experimental method to measure the optical activity of a material.	L2	9	1-6, 11-12
xii.	Higher order problems.	L3	8,9	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

Activity No. 14	<p>Explain polarization of light through a chart. List out the surfaces that reflect polarized light. Learn how polarization of light can be done by both transmission and reflection. Perform an experiment and make a report.</p> <p>USING CDs AND DVDs AS DIFFRACTION GRATINGS Ref:https://www.nnin.org/sites/default/files/files/Karen_Rama_USING_CDs_AND_DVDs_AS_DIFFRACTION GRATINGS_0.pdf</p> <p>Obtain the diffraction spectra using a CD and design an experiment to find the distance between the tracks on it)</p> <p>(Ref: https://www.brighthubeducation.com/science-lessons-grades-9-12/39347-diffraction-experiment-measuring-groove-spacing-on-cds/, https://silo.tips/download/diffraction-from-a-compact-disk)</p>
Activity No. 15	<p>What is the physics behind making 3D movies? Group Discussion (https://www.slideserve.com/rae/physics-behind-3d-movies-powerpoint-ppt-presentation) Make a report.</p>
Activity No. 16	<p>List out different types of zone plates and look for their applications in day to day life. Make a report.</p>
Activity No. 17	<p>Collect information and study how optically polarizing lenses are made. Visit a nearby lens making facility. Learn the principle behind sunglasses. Make a report.</p>
Activity No. 18	<p>Note for the teachers for the activity: Make 3 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <p>1. The first slide will explain the process of doing the experiment.</p>

	<p>2. In the second slide. Students will show the graph of measurement.</p> <p>3. In the third slide, they will list three observations from that study.</p> <p>Activity: Identify any 3 sharp edges of varying thickness and assign them to 3 groups. Shine a laser light pointing towards the edge of the needle. Observe the patterns formed on the wall or screen and measure the distance between the bands. Correlate the distance between the bands formed with the thickness of the edge and the distance from the edge to the screen. By this, calculate the wavelength of the laser light used.</p>
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Textbooks				
SI No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	The Physics of Waves and Oscillations,	N K Bajaj	Tata McGraw-Hill Publishing Company Ltd., Second Edition,	1984
2.	Waves and Oscillations	N Subramanyam and Brij Lal	Vikas Publishing House Pvt. Ltd., Second Revised Edition	2010
3.	A Text Book of Sound	D R Khanna and R S Bedi	Atma Ram & Sons, Third Edition	1952
4.	Oscillations and Waves	Satya Prakash	Pragathi Prakashan, Meerut, Second Edition	2003
5.	Optics	Ajoy Ghatak	McGraw Hill Education (India) Pvt Ltd	2017
6.	A text Book of Optics	Brij Lal, M N Avadhanulu & N Subrahmanyam	S. Chand Publishing	2012

References Books				
SI No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	Berkeley Physics Course – Waves,	Frank S Crawford Jr.	Tata Mc Graw-Hill Publishing Company Ltd., Special Indian Edition,.	2011
2.	Optics	<i>Eugene Hecht</i>	Pearson Paperback	2019
3.	Introduction To Optics	Pedrotti and Frank L ,	Pearson India	3rd Edition
4.	Fundamentals of Optics	Francis Jenkins Harvey White	McGraw Hill Education	2017

Formative Assessment	
Assessment	Marks
Internal Assessment	10
Activity	10
REU based Group Activity (Conduct, Report, Presentation)	10
Science Communication Seminar/Poster etc.)	10
Total	40

List of Experiments to be performed in the Laboratory	
1.	Velocity of sound through a wire using Sonometer.
2.	Frequency of AC using Sonometer.
3.	Study of Lissajous' Figures
4.	To verify the laws of transverse vibration using Melde's apparatus.
5.	Helmholtz resonator using tuning fork.
6.	Helmholtz resonator using electrical signal generator.
7.	To determine refractive index of the Material of a prism using sodium source.
8.	To determine the dispersive power and Cauchy constants of the material of a prism using mercury source.
9.	To determine the wavelength of sodium source using Michelson's interferometer.
10.	To determine wavelength of sodium light using Fresnel Biprism.
11.	To determine wavelength of sodium light using Newton's Rings
12.	To determine the thickness of a thin paper by measuring the width of the interference fringes produced by a wedge-shaped Film.
13.	To determine wavelength of (1) Na source and (2) spectral lines of Hg source using plane diffraction grating.
14.	To determine dispersive power and resolving power of a plane diffraction grating.

Minimum 8 experiments are to be conducted

Reference Book for Laboratory Experiments				
SI No	Title of the Book	Authors Name	Publisher	Year of Publication
1.	Advanced Practical Physics for students	B.L. Flint and H.T. Worsnop	Asia Publishing House.	1971
2.	A Text Book of Practical Physics	I. Prakash & Ramakrishna	Kitab Mahal, 11 th Edition	2011
3.	Advanced level Physics Practicals	Michael Nelson and Jon M. Ogborn	Heinemann Educational Publishers, 4 th Edition	1985
4.	A Laboratory Manual of Physics for undergraduate classes	D.P.Khandelwal	Vani Publications.	1985

Open Elective : OPTICAL INSTRUMENTS (III SEM)

Time: 3 hrs./week

Max Marks: 60

Unit 1.	Basics of Optics Scope of optics, optical path, laws of reflection and refraction as per Fermat's principle, magnifying glass, Lenses (thick and thin), convex and concave lenses, Lens makers formulae for double concave and convex lenses, lens equation. Focal and nodal points, focal length, image formation, combination of lenses,	13
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	dispersion of light: Newton's experiment, angular dispersion and dispersion power. Dispersion without deviation. (Expressions need not be derived, but have to be discussed qualitatively).	
Unit 2.	Camera and microscopes Human eye (constitution and working), Photographic camera (principle, construction and working), construction, working and utilities of Simple microscopes, Compound microscope, Electron microscopes, Binocular microscopes Self study Experimental determination of magnifying power of a microscope. (Construction part can be discussed through block diagrams)	14
Unit 3.	Telescopes and Spectrometer Construction, working and utilities of Astronomical telescopes Terrestrial telescopes Reflecting telescopes, Construction, working and utilities of Eyepieces or Oculars (Huygen, Ramsden's, Gauss) Spectrometer - Construction, working and utilities, measurement of refractive index. Self study Telescopes used at different observatories in and outside India.	13
	Activities: Find position and size of the image in a magnifying glass and magnification. Observe rain bows and understand optics. Create a rainbow. Find out what makes a camera to be of good quality. Observe the dispersion of light through prism. Make a simple telescope using magnifying glass and lenses. Learn principle of refraction using prisms. Check bending of light in different substances and find out what matters here. Learn about different telescopes used to see galaxies and their ranges. Many more activities can be tried to learn optics by going through you tubes and webistes such as https://spark.iop.org , http://www.yenka.com , https://publiclab.org etc.	

Open Elective: Sports Science (III Sem)

Time: 3 hrs./week

Max Marks: 60

Content (Use maths of 10 th Std only – Only qualitative discussion)		Hrs
Unit - 1		
Chapter No. 1	Measurement: Physical quantities. Standards and Units. International system of Units. Standards of time, length and mass. Precision and significant figures.	04
Chapter No. 2	Newton's laws of motion: Newton's first law. Force, mass. Newton's second law. Newton's third law. Mass and weight. Applications of Newton's laws.	03
Chapter No. 3	Projectile motion: Shooting a falling target. Physics behind Shooting, Javelin throw and Discus throw.	03
Topics for self study (If any)	https://www.real-world-physics-problems.com/physics-of-sports.html	
Unit - 2		
Chapter No. 4.	Conservation laws: Conservation of linear momentum, collisions – elastic and inelastic. Angular momentum. (Physics behind Carom, Billiards, Racing)	04
Chapter No. 5.	Centre of mass: Physics behind Cycling, rock climbing, Skating,	02
Chapter No. 6.	Gravitation: Origin, Newton's law of gravitation. Archimedes's principle, Buoyancy (Physics behind swimming)	04
Topics for self study (If any)	Archimedes' Principle: Made EASY Physics in You tube	
Unit - 3		
Chapter No.7	Food and Nutrition: Proteins, Vitamins, Fat, Blood pressure. Problems due to the deficiency of vitamins.	04
Chapter No. 8	Energy: Different forms of Energy, Conservation of mass-energy.	03
Chapter No . 9	Physical exercises: Walking, Jogging and Running, Weight management.	03
Topics for self study (If any)	10 Best Exercises for Everyone – Healthline	
Suggested Activities		
Activity No. 1	Identify the methods of measurement of time, length and mass from ancient time and build models for them.	02
	Reference : History of measurement - Wikipedia https://en.wikipedia.org/wiki/History_of_measurement	
Activity No. 2	Identify Physics principles behind various Sports activities.	01

	https://www.real-world-physics-problems.com/physics-of-sports.html	
Activity No. 3	List the difficulties experienced in Gymnastics, Cycling and weight lifting.	02
Activity No. 4	List the difficulties experienced in swimming.	01
Activity No. 3	List the difficulties experienced in Gymnastics, Cycling and weight lifting.	02
Activity No. 4	List the difficulties experienced in swimming.	01
Activity No. 5	Learn breathing exercises.	02
	Reference : 1) Simple Breathing Exercise for Beginners Swami Ramdev 2) https://www.yogajournal.com	
Activity No.6	Write an essay on Physical health v/s Mental health or conduct a debate on Physical health v/s Mental health.	01

Text Books

SI No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics for Entertainment	Yakov Perelman	Createspace Independent Pub.	
2	Physics Everywhere	Yakov Perelman	Prodinnova	2014
3	Mechanics for Entertainment	Yakov Perelman	Prodinnova	2014
4	Handbook of Food and Nutrition	M.Swaminathan	Bangalore Press 2012	2012
5	Food Science	B. Srilakshmi	New Age International Pub	2015

References Books

SI No	Title of the Book	Authors Name	Publisher	Year of Publication
1	Physics	Resnick, Halliday and Krane, Vol 1	Wiley Student Edition.	
2	For the love of Physics	Walter Lewin	Taxmann Publications Private Limited	2012
3	An Introduction to the Physics of Sports	VassiliosMcInnesS pathopoulos	CreateSpace Independent Publishing Platform	2013

Internet resources

<https://www.topendsports.com/biomechanics/physics.htm>
<https://www.real-world-physics-problems.com/physics-of-sports.html>
<https://www.healthline.com/>
<https://www.mayoclinic.org/>
<https://www.who.int/news-room/>

Detailed Syllabus of IV Semester Physics

Program Outcomes:	
1.	Disciplinary knowledge
2.	Communication Skills
3.	Critical thinking, Reflective thinking, Analytical reasoning, Scientific reasoning
4.	Problem-solving
5.	Research-related skills
6.	Cooperation/ Teamwork/ Leadership readiness/Qualities
7.	Information/ Digital literacy/Modern Tool Usage
8.	Environment and Sustainability
9.	Multicultural competence
10.	Multi-Disciplinary
11.	Moral and ethical awareness/Reasoning
12.	Lifelong learning / Self Directed Learning

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

Prerequisites	
i.	Study of Pre-University

Course Learning Outcomes

At the end of the course students will be able to:

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

Course Articulation Matrix

Mapping of Course Outcomes (CO) Program Outcomes

Course Outcomes / Program Outcomes		1	2	3	4	5	6	7	8	9	10	11	12
i.	Apply the laws of thermodynamics and analyze the thermal system.	X	X	X	X	X	X					X	X
ii.	Apply the laws of kinetic theory and radiation laws to the ideal and practical thermodynamics systems through derived thermodynamic relations.	X	X	X	X	X	X					X	X
iii.	Use the concepts of semiconductors to describe different Semiconductor devices like diode transistors, BJT, FET etc and explain their functioning.	X	X	X	X	X	X					X	X
iv.	Explain the functioning of OP-AMPS and them as the building blocks of logic gates.	X	X	X	X	X	X					X	X
v.	Give the use of logic gates using different theorems of Boolean Algebra followed by logic circuits.	X	X	X	X	X	X					X	X

Thermal Physics and Electronics

Unit – 1

The Portion to be Covered

Laws of Thermodynamics:

Review of the concepts of Heat and Temperature. **(1 Hour)**

First Law of Thermodynamics: Differential form, Internal Energy. Equation of state for an adiabatic process, Work Done during Isothermal and Adiabatic Processes. **(3 Hours)**

Second Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence. Reversible and Irreversible processes with examples. Heat Engines: Carnot engine & efficiency (no derivation). Refrigeration & coefficient of performance, Applications of Carnot engine in locomotion, Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale. Concept of Entropy, Second Law of Thermodynamics in terms of Entropy **(5 Hours)**

Third Law of Thermodynamics: Statement, Significance and Unattainability of Absolute Zero. **(2 Hours)**

Topic Learning Outcomes

At the end of the topic, students should be able to:

SL No	TLO's	BL	CO	PO
i.	Explain the first law of thermodynamics.	L1	1	1-6,11-12
ii.	Give the differential form of the first law of thermodynamics and define what the internal energy is.	L2	1	1-6,11-12
iii.	Obtain an expression for work done in isothermal and adiabatic processes.	L2	1	1-6,11-12
iv.	Give two systems of units of temperature measurement and give their equivalence.	L2	1	1-6,11-12
v.	Describe and Discuss heat engine based on Carnot cycle.	L2	1	1-6,11-12
vi.	Explain how the efficiency of refrigeration is measured?	L2	1	1-6,11-12
vii.	Detail out the application of the Carnot engine to a locomotion system.	L1	1	1-6,11-12
viii.	Define entropy and write an expression for entropy using the second law of thermodynamics.	L2	1	1-6,11-12
ix.	State the third law of thermodynamics and give its significance using the third law of thermodynamics describing why absolute zero temperature is not unattainable.	L2	1	1-6,11-12
x.	High Order Problems.	L3	1	1-6,11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

Activity No. 1

I feel cold because coldness enter my body. Discuss the statement in day-to-day life. Approximately give examples of

- (i) open system
- (ii) closed system and
- (iii) isolated system

Discuss when the temperature of the body is locked until what time you hold the thermometer in contact with a body. Discuss it in contact with laws of thermodynamics.

Discuss why when a person works or does exercise, he sweats. Reason it with the laws of thermodynamics.

Activity No. 2

Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.

- (i) The first slide will explain the process of doing the experiment.
- (ii) In the second slide. Students will show the graph of measurement.
- (iii) In the third slide, they will list three observations from that study.

Activity: Take four different sizes of same metal, preferable of same shape and give one piece to each group. Heat it uniformly on a hot plate. Keep a beaker of water with a thermometer immersed in it. Drop one hot metal into the water and record the temperature with time. Repeat the experiment for the other heated metal pieces of different sizes.

- (i) Plot a graph for the volume of the metal piece used v/s respective temperature change observed.
- (ii) Determine the heat capacity and specific heat of the metal used.

	All groups shall also do the following activity:
Activity No. 3	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <p>(i) The first slide will explain the process of doing the experiment. (ii) In the second slide. Students will show the graph of measurement. (iii) In the third slide, they will list three observations from that study.</p> <p>Activity: Take ice cubes of different size and immerse in water and measure the temperature change with time and repeat the experiment. Graph the observations.</p>

Thermal Physics and Electronics				
Unit – 2				
The Portion to be Covered				
Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb’s Free Energy. Properties and Applications. (1 Hour)				
Maxwell’s Thermodynamic Relations: Derivations and applications of Maxwell’s Relations (1) First order Phase Transitions with examples, Clausius - Clapeyron Equation (2) Values of Cp-Cv (3) Joule-Thomson Effect and Joule-Thomson coefficient and Derive an equation for Vander Walls gas. Attainment of low temperature by liquefaction of gases and adiabatic demagnetization. (3 Hours)				
Kinetic Theory of Gases: Distribution of Velocities: Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas: Mean, RMS and Most Probable Speeds. Degrees of Freedom, Law of Equipartition of Energy. Specific heats of Gases. (3 Hours)				
Radiation: Blackbody radiation, spectral distribution, the concept of energy density and pressure of radiation, Wien’s law, Wien’s displacement law, Stefan-Boltzmann law, Rayleigh-Jeans law, Ultraviolet Radiation catastrophe and Planck’s law of radiation. (3 Hours)				
Topic Learning Outcomes				
At the end of the topic, students should be able to:				
SL No	TLO’s	BL	CO	PO
i.	State Maxwell relations.	L1	2	1-6, 11-12
ii.	Give examples where Maxwells relations are used.	L1	2	1-6, 11-12

iii.	Explain the phase transition. Which is called as first order phase transition? Give Examples	L2	2	1-6, 11-12
iv.	State Clausius - Clapeyron Equation.	L1	2	1-6, 11-12
v.	Obtain an equation for difference in $C_p - C_v$.	L2	2	1-6, 11-12
vi.	State Joule-Thomson effect and Joule-Thomson coefficient.	L1	2	1-6, 11-12
vii.	Obtain an expression, giving the relation between pressure, volume and temperature for a real gas (Vander Waals gas).	L2	2	1-6, 11-12
viii.	Explain adiabatic demagnetization and how it is used to obtain low temperature by the liquification of gases?	L2	2	1-6, 11-12
ix.	State Maxwell-Boltzmann Law of Distribution of Velocities in Ideal gases.	L1	2	1-6, 11-12
x.	Explain the mean RMS and most probable speeds in ideal gases.	L1	2	1-6, 11-12
xi.	Explain degrees of freedom associated with particles in an ideal gas?	L2	2	1-6, 11-12
xii.	Define the specific heat of a gas.	L1	2	1-6, 11-12
xiii.	Explain black body radiation and its spectral distribution.	L1	2	1-6, 11-12
xiv.	Explain the different laws used to describe different parts of the curves of a spectral distribution of black body radiation.	L2	2	1-6, 11-12
xv.	Define ultraviolet radiation catastrophe? Discuss its importance in the explanation of black body radiation.	L2	2	1-6, 11-12
xvi.	Define Planck's law of radiation and discuss how it could describe the whole black body radiation curve.	L2	2	1-6, 11-12
xvii.	High Order Problems.	L3	2	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

<p>Activity No. 4</p>	<p>(i) Measuring the Solar Constant Materials: Simple flat sided Jar and Thermometer. Activity: Bottle containing water is exposed to solar radiation. The rise in temperature and time taken are noted. Calculate the heat absorbed by water and relate it to the output of the Sun.</p> <p>(ii) Thermo emf Materials: Suitable two dissimilar metal wires, voltage measuring device. Activity: In this experiment student will assemble the thermocouple and study the three effects namely, Seebeck, Peltier, and Thompson.</p> <p>(iii) Inverse square law of radiation Materials: A cardboard with a grid, cardboard with a hole, supporting clips, a ruler, candle.</p> <p>(iv) Activity: Students set the device. They count the lighted squares on the cardboard with the grid by varying the distance. And make necessary measurements and calculations to arrive at the inverse square law of radiation.</p> <p>Ref: Activity Based Physics Thinking Problems in Thermodynamics: Kinetic Theory http://www.physics.umd.edu/perg/abp/think/thermo/kt.htm</p>
<p>Activity No. 5</p>	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On the specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <p>(i) The first slide will explain the process of doing the experiment. (ii) In the second slide. Students will show the graph of measurement. (iii) In the third slide, they will list three observations from that study.</p> <p>Activity: Take two dissimilar metal wires. Spot weld them forming two junctions. Dip one junction in ice and heat the other junction with a burner. Plot a graph of time of heating v/s Thermo EFM generated in the voltmeter.</p>
<p>Activity No. 6</p>	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. On the specific day, each group has to make a ppt presentation of the following three slides. On the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <p>(i) The first slide will explain the process of doing the experiment. (ii) In the second slide. Students will show the graph of measurement. (iii) In the third slide, they will list three observations from that study.</p>

	<p>Activity: Make 4 groups and give different-sized balloons to each group. Fit different-sized nozzles into the mouth of the large balloons. Measure the temperature or the EMF generated using a thermocouple placed at the mouth of the nozzle as the pressurised gas is released. Plot a graph of time v/s temperature. Vary the volume of the balloon and repeat the experiment. Plot the graph of volume v/s temperature difference created.</p>
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Thermal Physics and Electronics				
Unit – 3				
The Portion to be Covered				
<p>Semiconductor devices: Review of Intrinsic and Extrinsic semiconductors, p-n junction and its Characteristics and Parameters, Diode approximations, Half-wave rectifier, Full-wave rectifier, Zener diode voltage regulators: Regulator circuit with no load, Loaded Regulator. (5 hours)</p> <p>Junction Transistors: Basics of Bipolar Junction Transistors (BJT), BJT operation, Common Base, Common Emitter and Common Collector Characteristics. Field Effect Transistor (FET) and its characteristics. Transistor as an Amplifier and Oscillator. (6 hours)</p>				
Topic Learning Outcomes				
At the end of the topic, students should be able to:				
SL No	TLO's	BL	CO	PO
i.	Define Semiconductors and Band Gap. Explain on what basis they are classified as intrinsic and extrinsic.	L2	3	1-6, 11-12
ii.	Define PN junction. Explain it's functioning in forward and reverse bias.	L1	3	1-6, 11-12
iii.	Explain the approximation used in a real diode with respect to an ideal PN Junction?	L2	3	1-6, 11-12
iv.	With a schematic diagram, explain half wave and full wave rectifiers.	L1	3	1-6, 11-12
v.	Define a Zener diode and explain how it is different from an ordinary diode using V-I curves?	L2	3	1-6, 11-12
vi.	With the schematic diagram, explain the working of voltage regulators of different types using a Zener diode.	L1	3	1-6, 11-12
vii.	Give the basic concepts used in the instruction of bipolar junction transistor and its operation.	L1	3	1-6, 11-12

viii.	Compare the V-I curve of common base common emitter and common collector BJT curves while explaining their working principles.	L2	3	1-6, 11-12
ix.	Define FET? Give its characteristics.	L1	3	1-6, 11-12
x.	Explain how a transistor can be used as an amplifier and an oscillator using a circuit diagram.	L2	3	1-6, 11-12
xi.	High Order Problems.	L3	3	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

Activity No. 7	<p>Wire a regulated DC power supply on a bread board or groove board to give a regulated output voltage of + 5 V; +15 V; Dual power output : ± 5 V; Dual power output : ± 15 V. Use: 3-pin voltage regulators.</p> <p>Components required:</p> <p>1.Step down transformer- 1 No. (5 V tapping, 100 – 500 mA current rating), BY 127 semiconductor diodes – 4 Nos, Inductor -1, Capacitor - 1, 3 pin 5V regulator-1</p> <p>Search for circuit diagram in books/net.</p> <p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <p>(i) The first slide will explain the process of doing the experiment. (ii) In the second slide. Students will show the graph of measurement. (iii) In the third slide, they will list three observations from that study.</p>
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	Activity: Form 3 groups and tell them to make a DC supply of low current of different voltages like 5V, 10V, and 15V on a breadboard
Activity No. 8	<ul style="list-style-type: none"> (i) Learn to identify the terminals of different types (packages) of BJTs. (ii) In the case of power transistors, learn how to fix a heat sink for the transistor. (iii) Learn the difference between BJT and FET in its operational characteristics.
Activity No. 9	<p>Note for the teachers for the activity: Make 3-4 groups among students and assign each group the activity of drawing one of the graphs given below. Provide a few days to complete the activity. One the specific day, each group has to make a ppt presentation of the following three slides. One the day of the presentation select a member from each group randomly to make the presentation. Based on the work and presentation, teacher shall assign marks to each group, wherein all members of the group will get equal marks.</p> <ul style="list-style-type: none"> (i) The first slide will explain the process of doing the experiment. (ii) In the second slide. Students will show the graph of measurement. (iii) In the third slide, they will list three observations from that study. <p>Activity: Take any 3 diode and assign one to each group. Measure its resistance when dipped in ice and heating the ice till it boils. Using this data, plot calibration curve of temperature v/s resistance and also the cooling curve of temperature V/s time for the diode by each group.</p>

Thermal Physics and Electronics				
Unit – 4				
The Portion to be Covered				
Electronics: Integrated Circuits (Analog and Digital), Operational Amplifier, Ideal characteristics of Op-Amp, Inverting and Non-Inverting Configurations. Applications- Voltage Follower, Addition and Subtraction. (4 hours)				
Digital: Switching and Logic Levels, Digital Waveform. Number Systems: Decimal Number System, Binary Number System, Converting Decimal to Binary, Hexadecimal Number System: Converting Binary to Hexadecimal, Hexadecimal to Binary. (3 hours)				
Boolean Algebra Theorems: De Morgan’s theorem. Digital Circuits: Logic gates, NOT Gate, AND Gate, OR Gate, NAND Gate, NOR Gate, Algebraic Simplification, Implementation of NAND and NOR functions. (4 hours)				
Topic Learning Outcomes				
At the end of the topic, students should be able to:				
SL No	TLO’s	BL	CO	PO

i.	Define op-amps and give the characteristics of an ideal op-amp.	L1	4	1-6, 11-12
ii.	Explains an inverting and non-inverting configuration of typical op-amps, with a schematic diagram.	L2	4	1-6, 11-12
iii.	Explain how op-amps can be used as a voltage follower, with a schematic diagram and with relevant expressions.	L2	4	1-6, 11-12
iv.	Explain how op-amps can be used as a voltage follower, adder and subtractor, with a schematic diagram and with relevant expressions.	L2	4	1-6, 11-12
v.	Give different digital wave forms and explain how one can visualize the switching and logic levels.	L1	5	1-6, 11-12
vi.	Write any four-digit numbers other than zero in the decimal number system and convert that into binary and hexadecimal.	L2	5	1-6, 11-12
vii.	Write any number in a Binary System of 8 digits other than zero and convert it into decimal and hexadecimal.	L2	5	1-6, 11-12
viii.	Write any number in the hexadecimal system of 4 digits other than zero and converted it into a binary and decimal number.	L2	5	1-6, 11-12
ix.	Give simplified diagram for a given Boolean circuit diagram of logic gates, and verify using the De-Morgans theorem.	L2	5	1-6, 11-12
x.	Why are X-NOR gates called Universal Gates?	L2	5	1-6, 11-12
xi.	High Order Problems.	L3	4, 5	1-6, 11-12

Teaching and Learning Methodology

Lecture/ PPT/ Videos/ Animations/ Role Plays/ Think-Pair-Share/ Predict-Observe-Explain/ Demonstration/ Concept mapping/ Case Studies examples/ Tutorial/ Activity/ Flipped Classroom/ Jigsaw/ Field based Learning/ Project Based Learning/ Mini Projects/ Hobby Projects/ Forum Theatre/ Dance/ Problem Based Learning/ Game Based Learning/ Group Discussion/ Collaborative Learning/ Experiential Learning / Self Directed Learning etc.

Assessment Techniques

One minute paper/ Predict-Observe-Explain/ Think-Pair-Share/ Class Test/ Quiz/ Crosswords/ Group Assessment/ Assignment/ Peer-to-Peer Evaluation/Seminar etc

Suggested Activities (2 Hours)

Activity No. 10	Learn how to implement logic functions (AND, OR, NOT) using just diodes and resistors.
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	With a circuit diagram show how different types of gates can be built by X-NOR gates.
Activity No. 11	<p>Operational Amplifiers</p> <p>(i) Understand the concept of virtual ground of an OP-AMP.</p> <p>(ii) Learn the different types of op-amps used for different applications.</p> <p>(iii) What is a buffer? Prepare a report on buffers and its application in instrumentation electronics.</p>
Activity No. 12	<p>(i) A man has to take a wolf, a goat, and some cabbage across a river. His rowboat has enough room for the man plus either the wolf or the goat or the cabbage. If he takes the cabbage with him, the wolf will eat the goat. If he takes the wolf, the goat will eat the cabbage. Only when the man is present are the goat and the cabbage safe from their enemies. All the same, the man carries wolf, goat, and cabbage across the river. How? Write the truth table for the above story and implement using gates.</p> <p>(ii) A locker has been rented in the bank. Express the process of opening the locker in terms of digital operation.</p> <p>(iii) A bulb in a staircase has two switches, one switch being at the ground floor and the other one at the first floor. The bulb can be turned ON and also can be turned OFF by and one of the switches irrespective of the state of the other switch. The logic of switching of the bulb resembles.</p>

Textbooks	
SI No	Title of the Book
1.	Electronic Devices and Circuits, David A. Bell, 2004, PHI, New Delhi
2.	Integrated Electronics, Jacob Millman and CC Halkias
3.	Digital Fundamentals, Floyd, 2001, PHI, New Delhi

References Books	
SI No	Title of the Book
1.	Heat and Thermodynamics, M.W. Zemansky, Richard Dittman, 1981, McGraw-Hill.
2.	Thermal Physics, S. Garg, R. Bansal and Ghosh, 2nd Edition, 1993, Tata McGraw-Hill
3.	A Treatise on Heat, Meghnad Saha, and B.N.Srivastava, 1958, Indian Press
4.	Modern Thermodynamics with Statistical Mechanics, Carl S. Helrich, 2009, Springer.
5.	Thermodynamics, Kinetic Theory & Statistical Thermodynamics, Sears & Salinger. 1988, Narosa.

6.	An Introduction to Thermal Physics, Daniel V Schroeder, 2020, Oxford University Press
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Formative Assessment	
Assessment	Marks
Internal Assessment	10
Activity	10
REU based Group Activity (Conduction, Report, Presentation)	10
Science Communication (Seminar/Poster etc)	10
Total	40

List of Experiments to be performed in the Laboratory	
1.	Mechanical Equivalent of Heat by Callender and Barne's method
2.	Coefficient of thermal conductivity of Copper by Searle's apparatus
3.	Coefficient of thermal conductivity of a bad conductor by Lee and Charlton's disc method
4.	Determination of Stefan's constant/ Verification of Stefan's law
5.	Variation of thermo-emf across two junctions of a thermocouple with temperature
6.	Verification of Clausius –Clapeyron equation and determination of specific enthalpy
7.	V-I Characteristics of Silicon & Germanium PN Junction diodes (FB & RB) OR V-I Characteristics of Zener Diode and voltage regulator
8.	Characteristics of BJT in Common Emitter Configuration OR Frequency response of CE Amplifier
9.	Half Wave and Full Wave Rectifier with and without Filter
10.	Non-inverting and Inverting op-amp circuits OR Voltage follower, Adder and Subtractor circuits
11.	Truth table verification of logic gates using TTL 74 series ICs. OR Logic Gates; Combinational Circuits; Sequential Circuits

Minimum 8 experiments are to be conducted

Reference Book for Laboratory Experiments	
SI No	Title of the Book
1.	Basic Electronics Lab (P242) Manual 2015-16, National Institute of Science Education and Research, Bhubaneswar, 2015.
2.	Suggested Readings: 1. B.L. Worsnop, H.T. Flint, "Advanced Practical Physics for Students", Methuen & Co., Ltd., London, 1962, 9e. 2. S. Panigrahi, B. Mallick, "Engineering Practical Physics", Cengage Learning India Pvt. Ltd., 2015, 1e.

Open Elective : NANOTECHNOLOGY (IV Sem)

Time: 3 hrs./week

Max Marks: 60

Unit 1:	<p>Introduction to nanomaterials</p> <p>Length scales in physics, Nanostructures: 1D, 2D and 3D nanostructures (nano dots, thin films, nanowires, nanorods), Band structure and density of states of materials at nanoscale, Size Effects in nano systems, Quantum confinement: Applications of Schrodinger equation Infinite potential well, potential step, potential box, quantum confinement of carriers in 3D, 2D, 1D nanostructures and its consequences.</p>	(13hours)
Unit 2:	<p>Synthesis and Characterization of nanostructure materials</p> <p>Top down and Bottom up approach, Photolithography. Ball milling. Gas phase condensation. Vacuum deposition. Physical vapor deposition (PVD): Thermal evaporation, E-beam evaporation, Pulsed Laser deposition. Chemical vapor deposition (CVD). Sol-Gel. Electrodeposition. Spray pyrolysis. Hydrothermal synthesis. Preparation through colloidal methods. MBE growth of quantum dots. X-Ray Diffraction. Optical Microscopy. Scanning Electron Microscopy. Transmission Electron Microscopy. Atomic Force Microscopy. Scanning Tunneling Microscopy.</p>	(13 hours)
Unit 3:	<p>Properties and applications of nanomaterials</p> <p>Coulomb interaction in nanostructures. Concept of dielectric constant for nanostructures and charging of nanostructure. Quasi-particles and excitons. Excitons in direct and indirect bandgap semiconductor nanocrystals. Quantitative treatment of quasiparticles and excitons, charging effects. Radiative processes: General formalization-absorption, emission and luminescence. Optical properties of heterostructures and nanostructures. Applications of nanoparticles, quantum dots, nanowires and thin films for photonic devices (LED, solar cells). Nanomaterial Devices: Quantum dots heterostructure lasers, optical switching and optical data storage. Magnetic quantum well; magnetic dots - magnetic data storage.</p>	(13 hours)
<p>References Books:</p> <ul style="list-style-type: none"> ➤ C.P. Poole, Jr. Frank J. Owens, Introduction to Nanotechnology (Wiley India Pvt. Ltd.). ➤ S.K. Kulkarni, Nanotechnology: Principles & Practices (Capital Publishing Company) ➤ K.K. Chattopadhyay and A. N. Banerjee, Introduction to Nanoscience and Technology (PHI Learning Private Limited). ➤ Richard Booker, Earl Boysen, Nanotechnology (John Wiley and Sons). ➤ M. Hosokawa, K. Nogi, M. Naita, T. Yokoyama, Nanoparticle Technology Handbook (Elsevier, 2007). ➤ Introduction to Nanoelectronics, V.V. Mitin, V.A. Kochelap and M.A. Stroscio, 2011, Cambridge University Press. ➤ Bharat Bhushan, Springer Handbook of Nanotechnology (Springer-Verlag, Berlin, 2004). 		

Student Activities:
<ol style="list-style-type: none"> 1. Synthesis of metal nanoparticles by chemical route. 2. Synthesis of semiconductor nanoparticles. 3. XRD pattern of nanomaterials and estimation of particle size. 4. To study the effect of size on color of nanomaterials. 5. Growth of quantum dots by thermal evaporation. 6. Prepare a disc of ceramic of a compound using ball milling, pressing and sintering, and study its XRD. 7. Fabricate a thin film of nanoparticles by spin coating (or chemical route) and study transmittance spectra in UV-Visible region. 8. Prepare a thin film capacitor and measure capacitance as a function of temperature or frequency. 9. Visit to nearby research labs to study the working of XRD, SEM, UV-Visible Spectrophotometer instruments 10. Visit to nearby research labs for project work and interaction with scientists at IISC, JNCSR, Universities etc.

Open Elective : ELECTRICAL INSTRUMENTS (IV Sem)

Time: 3 hrs./week

Max Marks: 60

Content		Hrs
Unit - 1		
Chapter No. 1	Voltage and current sources, Kirchoff's current and voltage laws, loop and nodal analysis of simple circuits with dc excitation. Ammeters, voltmeters: (DC/AC)	03
Chapter No. 2	Representation of sinusoidal waveforms, peak and rms values, power factor. Analysis of single-phase series and parallel R-L-C ac circuits. Three-phase balanced circuits, voltage and current relations in star and delta connections. Wattmeters: Induction type, single phase and three phase wattmeter, Energy meters: AC. Induction type single phase and three phase energy meter	05
Chapter No. 3	Instrument Transformers: Potential and current transformers, ratio and phase angle errors, phasor diagram, methods of minimizing errors; testing and applications.	05
Topics for self study (If any)	Types of switches and Circuits, Safety precautions and rules in handling electrical appliances, Electric shock, first aid for electrical shocks, Fuses, MCB, ELCB and Relays, Filament lamp, Tube light, CFL and LED	
Suggested Activities		
Activity No. 1	Identify variety of electrical switches and note down their applications/utility. Reference: Weblink/Youtube/Book	

Activity No. 2	Identify the hazards involved in handling electrical circuits and instruments, make a list of safety precautions as well as first aid for electrical shocks.	
	Reference : Weblink/Youtube/Book	
Unit - 2		
Chapter No. 4.	Galvanometers: General principle and performance equations of D'Arsonval Galvanometers, Vibration Galvanometer and Ballistic Galvanometer.	03
Chapter No. 5.	Potentiometers: DCPotentiometer, Crompton potentiometer, construction, standardization, application. AC Potentiometer, Drysdale polar potentiometer; standardization, application.	03
Chapter No. 6.	DC/AC Bridges: General equations for bridge balance, measurement of self inductance by Maxwell's bridge (with variable inductance & variable capacitance), Hay's bridge, Owen's bridge, measurement of capacitance by Schering bridge, errors, Wagner's earthing device, Kelvin's double bridge.	07
Topics for self study (If any)	Importance of grounding and <u>Earthing</u> , Methods for <u>Earthing</u> .	
Suggested Activities		
Activity No. 3	Make a study of importance of grounding in electrical circuits.	
	Reference : Weblink/Youtube/Book	
Activity No. 4	Prepare a detailed account of various methods of earthing and their utility/applications	
	Reference : Weblink/Youtube/Book	
Unit - 3		
Chapter No.7	Transducer: Strain Gauges, Thermistors, Thermocouples, Linear Variable Differential Transformer (LVDT), Capacitive Transducers, Piezo-Electric transducers, Optical Transducer, Hall Effect Transducer	06
Chapter No. 8	CRO: Block diagram, Sweep generation, vertical amplifiers, use of CRO in measurement of frequency, phase, Amplitude and rise time of a pulse. Digital Multi-meter: Block diagram, principle of operation	03
Chapter No. 9	Basics of lead acid batteries, Lithium Ion Battery, Battery storage capacity, Coulomb efficiency, Numerical of high and low charging rates, Battery sizing.	04
Topics for self study (If any)	Fuses, MCB, ELCB and Relays, Filament lamp, Tube light, CFL and LED	
Suggested Activities		
Activity No. 5	Prepare a document on evolution of incandescent bulbs to the present day LED lights	
	Reference : Weblink/Youtube/Book	

Activity No.6	Make a comparative study of Fuses, MCB, ELCB and Relays highlighting their use and applications	
	Reference : Weblink/Youtube/Book	

Text Books

AK.Sawhney, A Course in Elec.&Electronics Measurements&Instrumentation , Dhanpatrai& Co. 1978
A.D. Helfrick& W.D. Cooper, Modern Electronic Instrumentation and Measurement Techniques PHI,2016

References Books

1. D C Kulshreshtha, Basic Electrical Engineering, Mc Graw Hill Publications, 2019
2. David G Alciatore and Michel B Histan, Introduction to Mechatronics and Measurement Systems, 3rd, Tata McGraw Hill Education Private Limited, New Delhi., 2005
3. Vincent Del Toro, Electrical Engineering Fundamentals Prentice Hall India 2009

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UNIVERSITY OF MYSORE
Estd. 1916

Vishwavidyanilaya Karyasoudha
Crawford Hall, Mysuru- 570 005

No.AC6/303/2022-23

Dated: 01-09-2023

Notification

Sub:- Revised Syllabus and Scheme of Examination of Sociology programme (III & IV Semester) with effect from the Academic year 2023-24.

Ref:- 1. This office circular No: AC2(S)/151/2020-21 dated 08-08-2023.
2. Decision of BOS in Sociology meeting held on 10-08-2023.

The Board of Studies in Sociology which met on 10-08-2023 has resolved to recommend and approved the revised syllabus and scheme of Examinations of Sociology programme (III & IV semester) with effect from the academic year 2023-24.

Pending approval of the Faculty of Arts and Academic Council meetings the above said syllabus and scheme of examinations are hereby notified.

The syllabus and Scheme of Examinations contents may be downloaded from the University website i.e., www.uni-mysore.ac.in


Registrar
REGISTRAR
University of Mysore
MYSORE

To;

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS in Sociology, Manasagangothri, Mysore.
4. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
5. The Director, PMEB, Manasagangothri, Mysore.
6. Director, College Development Council, Manasagangothri, Mysore.
7. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
8. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
9. Office Copy.

BA Semester III

DSC-SOC-5 Course Title : Social Stratification and Mobility	
Course Credits : 3	Duration of ESA/Exam : 2. Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course on Social Stratification and Mobility focuses on the nature and consequences of social stratification. It identifies the different sources of stratification society and explains them within the framework of sociological theories. It also focuses on the role of different agents of mobility and how it has affected caste system in India

Course Outcomes :

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

1. Understand the nature and role of social stratification
2. Recognize different types of stratification and mobility
3. Describe different types of social stratification and mobility
4. Critically understand and analyze different theories of social stratification

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix : Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Understand the nature and role of social stratification	X	X	X	X				X	X
Recognise different types of stratification and mobility	X	X	X	X		X	X	X	X
Describe different types of social stratification and mobility	X	X	X	X	X	X	X	X	X
Critically understand and analyse different theories of social stratification	X	X		X			X	X	X

BA Semester III

DSC-SOC-6 Course Title : Sociology of Urban Life in India	
Course Credits : 3	Duration of ESA/Exam : 2. Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course describes the meaning and importance of Urban Sociology, helps in understanding the processes and types of urbanization. It helps to appreciate different theoretical approaches to understanding urban social life and discuss social issues related to urbanisation and urban social life

Course Outcomes :

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

1. Define the basic concepts of Urban Sociology
2. Identify and describe different types of city
3. Analytically understand theoretical issues related to urban society
4. Critically evaluate urban policies

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written / oral presentation by the students

Articulation Matrix : Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Define the basic concepts of Urban Sociology	X	X	X					X	X
Identify and describe different types of city	X		X	X				X	X
Analytically understand theoretical issues related to urban society	X	X	X	X	X	X	X	X	X
Critically evaluate urban policies	X	X	X	X	X	X	X	X	X

Content of Course : DSC-SOC-6 : Sociology of Urban Life in India	45 Hrs
Unit – 1 Introducing Urban Sociology	15
<p>Chapter No. 1. Meaning of Urban Sociology and its importance; a brief history of Urban Sociology in India and world</p> <p>Chapter No.2. Meaning of Urban, Urbanism and the City; Types of City: Metropolitan, Megacity and Global City</p> <p>Chapter No.3. Urbanisation and its Challenges: Rural-Urban Continuum, Suburbs, Urban Fringe, Urban Sprawl, Edge Cities</p>	
Unit – 2 Perspectives on Urban Society	15
<p>Chapter No. 4. Ecological Theory (Chicago School)</p> <p>Chapter No.5. World and Global Cities (Saskia Sassen)</p> <p>Chapter No.6 Spaces of Flows (Manuel Castells), Cities in the South</p>	
Unit – 3 Urban Policy	15
<p>Chapter No.7. Inequalities: Caste, Class, Gated Communities and Social Exclusion</p> <p>Chapter No.8. Urban Governance: 74th Amendment to the Indian Constitution, Urban Development and Planning</p> <p>Chapter No.9. Urban Policy: Urbanisation and Environmental Concerns, Smart cities</p>	

TEXT BOOKS :

1. Flanagan, William G 2010, Urban Sociology: Images and Structures, 5th Edition, Bowman and Littlefield Publishers Inc, New York
2. Gottdiener, Mark H & Others, 2015, The Urban Sociology, Routledge, New York
3. Hannigan, John and Grey Richards (Ed) 2017 The Sage Handbook of New Urban Studies, Sage London
4. Karp, David A & others, 2015, Being Urban: A Sociology of City Life, 3rd Edition, Praeger, California
5. LeGates, T R & Frederic Stout (Eds) 2016 The City Reader, 6th Edition, Routledge, New York
6. Lin, Jan & C Mele (Eds) 2013, The Urban Sociology Reader, Routledge, New York
7. Miles, Malcolm & Tim Hall 2004 The City Cultural Reader, 2nd Edition, Routledge, New York
8. Rao, Shankar (2021) Sociology of Indian Society, S Chand and Co, New Delhi

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Suggested Internet Resources

Unit 1

- <https://www.sociologylens.in/2021/07/urban.html>
- <https://www.oxfordbibliographies.com/view/document/obo-9780190922481/obo-9780190922481-0016.xml>
- <https://www.sciencedirect.com/topics/social-sciences/urban-sociology>
- <https://metropolitix.org/Thirty-Years-of-Urban-Sociology.html>
- <https://www.tandfonline.com/doi/pdf/10.1080/03585522.1958.10411404>
- <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803114909357>
- <https://www.britannica.com/topic/urban-culture>
- <https://www.britannica.com/topic/urbanization>
- <http://sociology.iresearchnet.com/urban-sociology/city/>
- <https://www.sociologydiscussion.com/rural-sociology/rural-urban-continuum-study-notes-rural-sociology/2625>
- <https://planningtank.com/settlement-geography/rural-urban-continuum>
- <https://www.britannica.com/topic/urban-sprawl>
- <https://www.nature.com/scitable/knowledge/library/the-characteristics-causes-and-consequences-of-sprawling-103014747/>
- <https://www.sciencedirect.com/science/article/pii/B978008097086874061X>
- <https://www.thoughtco.com/edge-city-1435778> Edge City
- <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/edge-city>
- <https://www.encyclopedia.com/reference/encyclopedias-almanacs-transcripts-and-maps/edge-cities>

Unit 2

- <https://www.yorku.ca/lfoster/200607/sosi3830/lectures/URBAN SOCIOLOGY THEORIES.html>
- <http://sociology.iresearchnet.com/urban-sociology/chicago-school-of-sociology/>
- <http://www.saskiasassen.com/pdfs/publications/the-global-city-brown.pdf>
- http://felix.openflows.com/html/space_of_flows.html
- <https://educationmuseum.wordpress.com/2013/03/08/manuel-castells-space-of-flows-and-timeless-time/>
- <https://www.dhi.ac.uk/san/waysofbeing/data/communities-murphy-castells-1999b.pdf> Grassrooting the Space of Flows
- <https://www.radicalphilosophy.com/article/the-space-of-flows-and-timeless-time>
- <https://www.britannica.com/topic/urban-culture>
- <https://www.britannica.com/topic/urban-culture/Types-of-urban-cultures>
- https://www.researchgate.net/publication/305936766_Urban_Culture_Definition_and_Contextualization
- <https://www.lincolnst.edu/publications/articles/urban-spatial-segregation>
- <https://journals.sagepub.com/doi/abs/10.1177/0975425317749657?journalCode=euaa>
- <https://www.journals.uchicago.edu/doi/10.1086/682199> Social-spatial Segregation: Concepts, Processes and Outcomes
- <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjoxL-g1Pb1AhWdsFYBHZAsD2cQFnoECAQQAQ&url=https%3A%2F%2Fzenodo.org%2Frecord%2F1131243%2Ffiles%2F10007443.pdf&usq=AOvVaw0mPjYK-waEhB77BckCYinO> A Review on the Social Features of Gated Communities
- https://pure.uva.nl/ws/files/3679113/18875_Albers_Gated_Communities.pdf
- <https://www.stirworld.com/think-opinions-gated-communities-in-india-social-integration-or-exclusion2>

<https://journals.openedition.org/belgeo/23832> Perspectives of Gated Communities' Socio-spatial Integration
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1061.4083&rep=rep1&type=pdf> Gated Communities:
Institutionalising Social Stratification

Unit 3

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7124478/> Urban Inequalities in 21st Century Economy
https://www.hks.harvard.edu/sites/default/files/centers/taubman/files/urban_inequality_final.pdf
<https://www.orfonline.org/research/rising-inequality-and-urban-exclusion/>
<https://gsdrc.org/topic-guides/urban-governance/concepts-and-debates/what-is-urban-governance/>
<https://www.sciencedirect.com/topics/social-sciences/urban-governance>
<https://www.nagrika.org/nagrikalarticles/urbangovernance>
<https://www.encyclopedia.com/history/encyclopedias-almanacs-transcripts-and-maps/popular-and-elite-culture>
https://jag.journalagent.com/itujfa/pdfs/ITUJFA-38233-THEORY_ARTICLES-DENER.pdf
<https://www.encyclopedia.com/humanities/encyclopedias-almanacs-transcripts-and-maps/urbanization-leisure>
<https://www.urbanfoundry.co.uk/wp-content/uploads/Env-Planning-C-article.pdf>
https://www.researchgate.net/publication/23731534_The_contribution_of_leisure_and_entertainment_to_the_evolution_of_the_polycentric_urban_network_on_regional_scale_-_towards_a_new_research_agenda
<https://files.eric.ed.gov/fulltext/EJ1271868.pdf> Youth Leisure in Cultural Space of Modern City
https://www.researchgate.net/publication/287749933_India%27s_Middle_Class_New_Forms_of_Urban_Leisure_Consumption_and_Prosperty
<https://www.livemint.com/Opinion/VpWzSdVCKazbdi0B52iPaM/The-changing-face-of-the-urban-leisure-economy.html>
<https://www.prb.org/resources/urbanization-an-environmental-force-to-be-reckoned-with/>
<https://www.iied.org/urbanisation-environment>
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwizqcGg2Pb1AhUYsFYBHeuLA2QQFnoECCUOAO&url=https%3A%2F%2Fwww.mdpi.com%2F2071-1050%2F12%2F24%2F10402%2Fpdf&usq=AOvVaw1Zuq50RVdp3csiMTc1YCR2> Environmental Concerns and Urbanisation in India

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4824703/> Urbanisation and Greening of Indian Cities
<https://www.niti.gov.in/sites/default/files/2021-09/UrbanPlanningCapacity-in-India-16092021.pdf>
<https://cprindia.org/bookchapters/urban-india-and-climate-change/> in the book Indian in a Warming World (whole book can be downloaded)

Suggested Activities: Please refer to the following books

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London
McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi
White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi

B.A Semester III – Open Elective - 3

SOC-OE – 3 Course Title : Sociology of Food Culture	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

Sociology of Food Culture course scrutinises social behaviour related to food habits. It critically looks at cultural aspects of food like sacrality, taboo, sociality etc. The Course also looks at catering industry, association between food, diet and beauty and emerging food practices like local, GM, organic etc.

Course Outcomes :

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

1. Appreciate the complex relations between food, individual and society
2. Understand the evolution of food production and consumption from household to industry
3. Critically Understand the relationship between food and risk society

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix : Mapping of Course Outcomes (COs) with Program

Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Appreciate the complex relations between food, individual and society	X	X		X				X	
Understand the evolution of food production and consumption from household to industry	X	X	X	X		X	X	X	
Critically Understand the relationship between food and risk society	X	X	X	X	X	X	X	X	X

Content of SOC-OE-3 : Sociology of Food Culture	45 Hrs
Unit – 1 Introduction	15
Chapter No. 1. Sociological Nature of Food and Eating; Sacred and Taboo Foods; Food, Sociality and Social Change Chapter No.2. Determinants of Food Consumption - Types of Food: Vegetarian, Nonvegetarian, Omnivore and Vegan Chapter No.3. Local Food Cultures and Taste for Exotic	
Unit – 2 Food from Domestic to Industry	15
Chapter No. 4. Industrialisation of Food Production and Distribution Chapter No.5. Hotels, Restaurants and Catering Sector Chapter No.6. Cooking for self-pleasure	
Unit – 3 Food and Risk Society	15
Chapter No.7. Diet and Body: Social Appearance and Beauty Chapter No.8. Global Overview: Consumption: Patterns and Reasons; Overeating, Underrating and Hunger Chapter No.9. GM Foods, Organic Foods and Modern Food Practices as Risk Factor	

TEXT BOOKS :

1. Beardsworth, Alan and Teresa Keil, 1997, *Sociology on the Menu: An invitation to the study of food and society*, Routledge, London
2. Beck, Ulrich 1992, *Risk Society: Towards a New Modernity*, Sage Publications
3. Carolan, Michael, 2012, *The Sociology of Food and Agriculture*, Routledge, London
4. *Food Marketing to Children and Youth*, 2006, Institute of Medicine, USA
5. German, John and Lauren Williams (Eds) 2017, *A Sociology of Food and Nutrition: The social appetite*, Oxford University Press, Australia
6. McIntosh, Wm.Alex, 1996, *Sociologies of Food and Nutrition*, Springer, New York
7. Murcott, Anne (Ed) 1983, *The Sociology of Food and Eating*, Digitised by Google
8. Poulain, Jean-Pierre, 2017, *The Sociology of Food: eating and the place of food in society*, Trby Augusta Dorr, Bloomsbury, UK
9. Rastogi, Sanjeev (Ed) 2014, *Ayurvedic Science of Food and Nutrition*, Springer, New York

Suggested Internet Resources :

Unit 1

[https://www.researchgate.net/publication/](https://www.researchgate.net/publication/313215444)

[313215444 The Sociology of Food Eating and Place of Food in Society](https://www.researchgate.net/publication/313215444)

<https://apps.who.int/iris/bitstream/handle/10665/330447/WH-1996-Mar-Apr-p10-12-eng.pdf?sequence=1>
 Food Beliefs and Taboos

<https://journals.sagepub.com/doi/pdf/10.1177/1440783310384448> An article on : ASociology of Food and Eating: Why Now?

Gofton, L. (1989), "Sociology and Food Consumption", British Food Journal, Vol. 91 No. 1, pp. 25-31. <https://doi.org/10.1108/00070709010133766>

https://www.e3s-conferences.org/articles/e3sconf/pdf/2021/30/e3sconf_farba2021_10027.pdf An article on Sociology of Nutrition

Sylvia Sherwood, Sociology of food and eating: implications for action for the elderly, The American Journal of Clinical Nutrition, Volume 26, Issue 10, October 1973, Pages 1108–1110, <https://doi.org/10.1093/ajcn/26.10.1108>

<https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1467-9566.2008.01128.x> Food and Eating as Social Practice

Højlund, S. Taste as a social sense: rethinking taste as a cultural activity. Flavour 4, 6(2015). <https://doi.org/10.1186/2044-7248-4-6>

<https://www.aabri.com/manuscripts/141797.pdf> Food and identity: Food studies, cultural, and personal identity

Unit 2

<https://www.foodsystemprimer.org/food-production/industrialization-of-agriculture/>

<https://www.alimentarium.org/en/magazine/society/industrialisation-food-creates-unease>

<https://pubs.iied.org/sites/default/files/pdfs/migrate/9338IIED.pdf> Food Industrialisation and Food Power: Implications for Food Governance

<https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095827139>

Wood, R.C. (1990), "Sociology, Gender, Food Consumption and the Hospitality Industry", British Food Journal, Vol. 92 No. 6, pp. 3-5. <https://doi.org/10.1108/00070709010001861>

[sci-hub.se/10.1111/j.1470-6431.1991.tb00672.x](https://www.sci-hub.se/10.1111/j.1470-6431.1991.tb00672.x) The Shock of the New: A Sociology of Nouvelle Cuisine

Meike Brückner, Sandra Wajic & Christine Bauhardt (2021) Reflection: Food as pleasure or pressure? The care politics of the pandemic, Food and Foodways, 29:3, 289-298, DOI: 10.1080/07409710.2021.1943612; <https://www.tandfonline.com/doi/pdf/10.1080/07409710.2021.1943612>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8071848/> Well-Being and Cooking Behaviour

Unit 3

Wood, R.C. (1990), "Sociology, Gender, Food Consumption and the Hospitality Industry", British Food Journal, Vol. 92 No. 6, pp. 3-5. <https://doi.org/10.1108/00070709010001861>

https://research-information.bris.ac.uk/ws/portal/ciles/portal/133940034/Sociology_cinal_published1039.full.pdf Positioning Food Cultures: Alternative Food as Distinctive Consumer Practice

<https://www.uakron.edu/sociology/faculty-staff/rp/>

[Thinking%20Sociologically%20about%20Sources%20of%20Obesity%20in%20the%20United%20States.pdf](https://www.uakron.edu/sociology/faculty-staff/rp/Thinking%20Sociologically%20about%20Sources%20of%20Obesity%20in%20the%20United%20States.pdf) Thinking Sociologically about Sources of Obesity in America

<https://www.fao.org/3/i7846e/i7846e.pdf> Nutrition and Food Systems: A Report by High Level Panel of Experts

Suggested Activities: Please refer to the following books :

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London

McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi

White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi

BA Semester III - Open Elective 3

SOC-OE – 3 Course Title : Sociology of Tourism Management	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course aims to explain the relationship between tourists and hosts in terms of group interaction and its impact on each other. It draws attention to the potential issues involved in tourism industry like planning, concerns about sustainable development and its effect on environment. The course also focuses on types of tourism.

Course Outcomes :

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

1. Explain the relationship between tourism, culture and cultural heritage
2. Explain the social, cultural and economic impacts of tourism on local communities
3. Understand the relationship between tourism and consumption
4. Understand the principles of tourism management

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix : Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Explain the relationship between tourism, culture and cultural heritage	X	X		X				X	
Explain the social, cultural and economic impacts of tourism on local communities	X	X	X	X	X	X			
Understand the relationship between tourism and consumption	X	X	X	X			X	X	X
Understand the principles of tourism management			X	X	X	X	X		X

Content of SOC-OE-3 : Sociology of Tourism Management	45 Hrs
Unit – 1 Sociology, Tourism, Tourists	15
<p>Chapter No. 1. Definitions of Sociology, Culture, Tourism, Tourists, Tourist Gaze; Relation between Tourism, Leisure and Recreation; Sociology of Tourism</p> <p>Chapter No.2. Types of Tourism: Cultural, Heritage, Medical, Food, Sports and Eco Tourism</p> <p>Chapter No.3. Tourism and Locals; Hosts and Guests: Mutual Impact</p>	
Unit – 2 Tourism System	15
<p>Chapter No. 4. Development and Structure of the Tourist System - Motivation and Role of Tourist</p> <p>Chapter No.5. Impact of Tourism on Host Place: Social, Economic, Climate and Environmental</p> <p>Chapter No.6. Sustainable Tourism: Definitions of Sustainable and Sustainable Tourism; Sustainability of Tourism</p>	
Unit – 3 Tourism Management	15
<p>Chapter No.7. Demand for Tourism at Individual and Market level; Tourism Consumer Behaviour: Roles and Decision Making Process; Accommodation: Definition and Management of Commercial Accommodation; Transportation as Tourist Product; Role of Intermediaries</p> <p>Chapter No.8. Marketing for Tourism: Definition; Difference between Marketing and Selling; Tourism as a Service Industry: Product, Price, Promotion and Place</p> <p>Chapter No.9. Information Technology and Tourism: ICT as a Business Tool; eTourism</p>	

TEXT BOOKS :

1. Burns, Peter M 1999, An Introduction to Tourism and Anthropology, Routledge, London/Fletcher,
2. John & others, 2018, Tourism: Principles and Practice, 6th Edition, Pearson, UK
3. Nash, Dennis 2007, The Study of Tourism: Anthropological and Sociological Beginnings, Elsevier, Amsterdam
4. Urry, John 1998, The Tourist Gaze: Leisure and Travel in Contemporary Societies, Sage, New Delhi

Suggested Internet Resources :

Unit-1

<https://medcraveonline.com/SIJ/emerging-trends-in-sociology-of-tourism.html> <https://www.uvm.edu/rsenr/rm230/urry.pdf>
Tourist Gaze

<https://www.lancaster.ac.uk/fass/resources/sociology-online-papers/papers/urry-globalising-the-tourist-gaze.pdf>

<https://iarconsortium.org/articles/861-The-Relationship-between-Leisure-Tourism-and-Events>
<https://wedocs.unep.org/bitstream/handle/20.500.11822/11349/>

rsocr_printedition.compressed_Part28.pdf?sequence=29&isAllowed=y Tourism and Recreation

<https://tourismnotes.com/travel-tourism/> Tourism and types

<http://www.ijrcr.com/vol-1/T.Arunmozhi%20and%20A.%20Panneerselvam.pdf> Types of Tourism in India

https://www.researchgate.net/publication/269412018_Tourism_and_Local_Society_and_Culture

<https://eujournalfuturesresearch.springeropen.com/articles/10.1007/s40309-015-0078-5>

<https://www.researchgate.net/publication/>

330877530_Anthropology_of_Tourism_Researching_Interactions_between_Hosts_and_Guests

<https://sciendo.com/pdf/10.1515/cjot-2018-0004> Researching Interaction between Hosts and Guests

<https://scholars.wlu.ca/cgi/viewcontent.cgi?article=1948&context=etd> Understanding Tourist-Host Interaction and their Influence on Quality Tourism Experience

Unit 2

<https://www.owlgen.in/what-do-you-understand-by-tourism-system/>

<https://www.tourismbeast.com/tourism-system/>

http://www.drbramedkarcollege.ac.in/sites/default/files/Impact%20of%20Tourism_pdf.pdf

<https://www.skylineuniversity.ac.ae/pdf/tourism/Tourism%20Impacts.pdf>

<https://www.eajournals.org/wp-content/uploads/THE-IMPACTS-OF-TOURISM-INDUSTRY-ON-HOST-COMMUNITY.pdf>

<https://www.gstcouncil.org/what-is-sustainable-tourism/>

<https://sustainabledevelopment.un.org/topics/sustainabletourism>

<https://tourismnotes.com/sustainable-tourism/>

Unit 3

<https://repository.up.ac.za/bitstream/handle/2263/24684/02chapters3-4.pdf?sequence=3>

<https://blog.datumize.com/determinants-of-demand-in-the-tourism-and-travel-industries>

<https://opentextbc.ca/introtourism/chapter/chapter-3-accommodation/>

<https://ncert.nic.in/textbook/pdf/lehe207.pdf> Hospitality Management

http://cbseacademic.nic.in/web_material/Curriculum/Vocational/2018/Tourism/XII/

<Introduction%20to%20Hospitality%20.pdf>

<https://tourismnotes.com/tourism-transportation/> <https://www.tourismbeast.com/transport-as-a-component-of-tourism/> https://onlinecourses.swayam2.ac.in/cec19_mg26/preview

<https://www.marketing91.com/what-is-tourism-marketing/> <https://www.igi-global.com/dictionary/e-tourism/42775>

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2289872

https://www.laguardia.edu/uploadedfiles/ce/content/english_language_learning/

center_for_immigrant_education_and_training/gp-hotel_t.e.a.c.h/unit5.pdf

https://www.laguardia.edu/uploadedfiles/ce/content/english_language_learning/center_for_immigrant_education_and_training/gp-hotel_t.e.a.c.h/unit5.pdf

Suggested Activities: Please refer to the following books :

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London

McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi

White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi.

BA Semester III - Open Elective 3

SOC-OE – 3 Course Title : Social Inequality in India	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course focuses on understanding the nature and consequences of social inequality. It highlights the role of status and power in bringing about inequality and analyses its impact on social life of India. The course also critiques the measures taken by Indian State to mitigate social inequality

Course Outcomes :

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

1. Understand the meaning and recognise the features of social inequality
2. Recognise the interconnections between different forms of inequality in India
3. Critique the role of affirmative action to mitigate social inequality

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Understand the meaning and recognise the features of social inequality	X	X		X	X			X	
Recognise the interconnections between different forms of inequality in India	X	X		X		X			
Critique the role of affirmative action to mitigate social inequality	X	X	X					X	X

Content of SOC-OE-3 : Social Inequality in India	45 Hrs
Unit – 1 Introduction	15
<p>Chapter No. 1. Meaning and Characteristic Features of Social Inequality; Forms of Social Inequality: Caste, Class and Tribe</p> <p>Chapter No.2. Role of Status, Power, Life Chances and Life Styles</p> <p>Chapter No.3. Sources of Inequality: Birth, Wealth, Income, Education, Occupational Prestige and Political Position</p>	
Unit – 2 Impact of Social Inequality	15
<p>Chapter No. 4. Health and Wellbeing</p> <p>Chapter No.5. Access to Education</p> <p>Chapter No.6. Access to Justice</p>	
Unit – 3 Social Inequality and Affirmative Action	15
<p>Chapter No. 7: Views of Dr B R Ambedkar and Affirmative Principle in the Constitution of India (Constitutional Provisions)</p> <p>Chapter No.8: Scheduled Castes, Scheduled Tribes and Status of Women in these groups; Status of Transgenders</p> <p>Chapter No.9: Status of Landless Agricultural Labourers, Status of Land Ownership among Scheduled Caste and Scheduled Tribes</p>	

TEXT BOOKS :

1. Beteille, Andre 1992, The Backward Classes in Contemporary India, Oxford University Press, Delhi
2. Charley, S R and G K Karanth 1998 (Eds) Challenging Untouchability, Sage India, Delhi
3. Gore, M S 1993 The Social Context of an Ideology: Ambedkar's Political and Social Thought, Sage, New Delhi
4. Judge, Paramjit S (Ed) 2013 Towards Sociology of Dalits, Readings in Indian Sociology - Voume 1, Sage, New Delhi
5. Gupta, Dipankar 1991, Social Stratification, Oxford University Press, Delhi
6. Jodhka, Surnider S, 2018, Caste in Contemporary India, 2nd Edition, Routledge, London
7. Omvedt, Gail 2013 Dalits and the Democratic Revolution, Sage, New Delhi
8. Singh, K S (1994) The Scheduled Tribes, Oxford University Press, New Delhi

BA Semester IV

DSC-SOC-7 - Course Title : Sociology of Marginalized Groups	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This Course discusses the process of marginalisation and its types and examines the consequences of marginalisation. It also describes the measures to ameliorate the negative consequences of marginalisation and analyse the impact of forces of social change on marginalised groups.

Course Outcomes :

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

1. Knowledge of marginalization and marginalized groups in India
2. Understand the impact of powerlessness in social life
3. Ability to participate and critically view efforts undertaken to address
4. nequalities

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Knowledge of marginalisation and marginalised groups in India	X	X	X	X	X			X	X
Understand the impact of powerlessness in social life	X	X	X	X				X	X
Ability to participate and critically view efforts undertaken to address inequalities	X	X	X	X	X	X	X	X	X

Content of Course : DSC-SOC-7- Sociology of Marginalized Groups	45 Hrs
Unit - 1 Introduction	15
<p>Chapter No. 1. Marginalisation: Meaning and Nature; Types of Marginalisation: Social, Political, Economic; Relationship between Marginalisation and Social Exclusion</p> <p>Chapter No.2. Causes of Marginalisation; Marginalised Groups: Caste, Gender, People with Disabilities, Minorities, Tribes and Elderly</p> <p>Chapter No.3. Socio-economic Indices of Marginalisation: Poverty, Relative Deprivation, Exploitation, Discrimination, Educational Backwardness, Inequality and Untouchability</p>	
Unit - 2 Marginalisation and Affirmative Action	15
<p>Chapter No. 4. Views of Dr B R Ambedkar and Affirmative Principle in the Constitution of India (Constitutional Provisions)</p> <p>Chapter No.5. Scheduled Castes, Scheduled Tribes and Status of Women in these groups; Status of Transgenders</p> <p>Chapter No.6. Status of Landless Agricultural Labourers, Status of Land Ownership among Scheduled Caste and Scheduled Tribes</p>	
Unit - 3 Marginalised Groups and Social Change	15
<p>Chapter No.7. Social Mobility among Marginalised Groups: Education, Employment, Political Participation, Conversion, Migration</p> <p>Chapter No.8. Challenges of Privatisation and Response by Marginalised Groups</p> <p>Chapter No.9. Social Justice in the context of Globalisation</p>	

TEXT BOOKS :

1. Beteille, Andre 1992, The Backward Classes in Contemporary India, Oxford University Press, Delhi
2. Charley, S R and G K Karanth 1998 (Eds) Challenging Untouchability, Sage India, Delhi
3. Gore, M S 1993 The Social Context of an Ideology: Ambedkar's Political and Social Thought, Sage, New Delhi
4. Judge, Paramjit S (Ed) 2013 Towards Sociology of Dalits, Readings in Indian Sociology - Voume 1, Sage, New Delhi
5. Gupta, Dipankar 1991, Social Stratification, Oxford University Press, Delhi
6. Jodhka, Surnider S, 2018, Caste in Contemporary India, 2nd Edition, Routledge, London
7. Omvedt, Gail 2013 Dalits and the Democratic Revolution, Sage, New Delhi
8. Singh, K S (1994) The Scheduled Tribes, Oxford University Press, New Delhi

BA Semester IV

DSC-SOC- 8 Course Title : Population and Society	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

The course on population and society explains the relationship between population and society and demographic trends in the world and their major determinants. Also it discusses the need and basis of India's population policies and programmes

Course Outcomes :

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

1. Define the basic concepts of population studies
2. Understand the dynamics of population from sociological perspectives
3. Understand the problems around India's population
4. Critically analyze the population policies of India

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Define the basic concepts of population studies	X	X	X					X	X
Understand the dynamics of population from sociological perspectives	X	X	X	X	X			X	X
Understand the problems around India's population	X		X	X	X	X	X	X	X
Critically analyze the population policies of India	X		X	X	X	X	X	X	X

Content of Course : DSC-SOC- 8 : Population and Society	45 Hrs
Unit – 1 Introduction	15
<p>Chapter No. 1. Relationship between society and population</p> <p>Chapter No.2. Global Population Trends: role of fertility, mortality and migration; Power of Doubling</p> <p>Chapter No.3. Age and Sex Composition in India and its Impact; Demographic Dividend</p>	
Unit – 2 Sources of Demographic Data	15
<p>Chapter No. 4. Population Census: Uses and Limitations; Indian Censuses</p> <p>Chapter No.5. Vital Registration System</p> <p>Chapter No.6. National Sample Survey; Sample Registration System; National Family Health Surveys (NFHS)</p>	
Unit – 3 Population Theories and Policy	15
<p>Chapter No.7. Population Theories: Malthusian Theory, Optimum Theory of Population and Demographic Transition Theory</p> <p>Chapter No.8. Need of Population Policy; Millennium Development Goals and Sustainable Development Goals</p> <p>Chapter No.9.; Population Policy of India; Programmes and their Evaluation</p>	

TEXT BOOKS :

1. Agarwal, S.N. (1989) Population Studies with Special Reference to India. New Delhi, Lok Surjeet Publication.
2. Ahuja, Ram. (1992) Social problems in India. Jaipur, Rawat Publications.
3. Bhende, A. A., and Kanitkar, T. (2019) Principles of population studies. Bombay, Himalaya Pub. House.
4. Bogue, D. J. (1969) Principles of demography. New York: Wiley.
5. Bose, Ashish (1991) Demographic Diversity in India, B.R. Publishing Corporation Delhi

BA Semester IV – Open Elective - 4

SOC-OE - 4 Course Title : Sociology of Youth	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course on youth focuses on youth culture, youth subculture and the changes they are experiencing. It draws attention to the role of peer groups, influence of drug culture and media on the self perception of youths in modern world.

Course Outcomes :

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

1. Recognize and explain how sociologists conceptualize and study youth and youth hood
2. Understand how youth evolve in the context of social, economic and cultural settings
3. Understand concerns and problems of youth

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Recognise and explain how sociologists conceptualise and study youth and youth hood	X	X		X				X	
Understand how youth evolve in the context of social, economic and cultural settings	X	X	X	X	X	X			
Understand concerns and problems of youth	X	X	X	X			X	X	X

Content of SOC-OE-4 : Sociology of Youth	45 Hrs
Unit – 1 Age Groups and Social Structure	15
Chapter No. 1. Age Differentiation, Age Groups. Age Sets; Problem of Generations; Cultural Lag (W F Ogburn); Structural Lag ((Riley) Chapter No.2. Youth Cultures, Subcultures, Counter Culture, Contra Culture Chapter No.3. Youth Vs Caste; Youth Vs Class	
Unit – 2 Youth and Society	15
Chapter No. 4. Youth, Music and Leisure Chapter No.5. Globalisation of Youth Culture; Marketing Youth Culture Chapter No.6. Youth, Media and Technology	
Unit – 3 Youth and Social Concerns	15
Chapter No.7. Youth, Protest and Violence: Social, Political and Economic Chapter No.8. Youth, Peer groups and Drug Culture Chapter No.9. Youth, Nationalism and Globalisation	

TEXT BOOKS :

1. Dannie Kjeldgaard, Søren Askegaard, The Glocalization of Youth Culture: The Global Youth Segment as Structures of Common Difference, *Journal of Consumer Research*, Volume 33, Issue2, September 2006, Pages 231–247, <https://doi.org/10.1086/506304>
2. Edmunds, June; Turner, Bryan S. (2005). "Global Generations: Social Change in the Twentieth Century". *British Journal of Sociology*. 56 (4): 559–577. doi:10.1111/j.1468-4446.2005.00083
3. Gangrade, K D 1970, Intergenerational Conclit: A Sociological Study of Indian Youth, *Asian Survey*, Vol.10, No.10. pp.924-36
4. Jeffrey, Craig 2010, Timepass: Youth, class and time among unemployed young men in India *American Ethnologist*, Vol.37, No.3, pp.465-481
5. Katzenstein, Mary F 1977, Mobilisation of Indian Youth in the Shiv Sena, *Pacilic Affairs*, Vol.50. No.2, pp.231-248
6. Lukose, Ritty 2005, Consuming Globalisation: Youth and Gender in Kerala, India, *Journal of Social History*, Vol.38, No.4, pp.915-935
7. Mannheim, Karl (1952) "The Problem of Generations". In Kecskemeti, Paul (ed.). *Essays on the Sociology of Knowledge: Collected Works*, Volume 5. New York: Routledge. p. 276–322
8. Mathur, Charu & others 2014, Change in Tobacco Use Over Time in Urban Indian Youth:

The Modernity Role of Socioeconomic Status, *Health, Education & Behaviour*, Vol.41, No.2, pp.121-126

9. Riley, Matilda White 1987, On the Significance of Age in Sociology, *American Sociological Review*, Vol.52, No.1, pp.1-14

Suggested Internet Resources

Unit 1

<https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/age-differentiation>
<https://www.weforum.org/agenda/2015/09/how-different-age-groups-identify-with-their-generational-labels/>
https://censusindia.gov.in/census_and_you/age_structure_and_marital_status.aspx
<https://www.collinsdictionary.com/dictionary/english/age-group> <https://ourworldindata.org/age-structure>
https://1989after1989.exeter.ac.uk/wp-content/uploads/2014/03/01_The_Sociological_Problem.pdf
Problem of Generations
<https://www.style-research.eu/resource-centre/glossary/generation-intergenerational-relationships/>
[https://socialsci.libretexts.org/Bookshelves/Sociology/Introduction_to_Sociology/Book%3A_Sociology_\(Boundless\)/03%3A_Culture/3.03%3A_Culture_and_Adaptation/3.3C%3A_Cultural_Lag](https://socialsci.libretexts.org/Bookshelves/Sociology/Introduction_to_Sociology/Book%3A_Sociology_(Boundless)/03%3A_Culture/3.03%3A_Culture_and_Adaptation/3.3C%3A_Cultural_Lag)
<https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/cultural-lag>
<https://www.encyclopedia.com/social-sciences/encyclopedias-almanacs-transcripts-and-maps/structural-lag>
<https://www.sciencedirect.com/topics/social-sciences/youth-culture>
<https://www.encyclopedia.com/social-sciences-and-law/sociology-and-social-reform/sociology-general-terms-and-concepts/youth-culture>
<https://www.sciencedirect.com/topics/social-sciences/subcultures>
<https://haencler.sites.grinnell.edu/subcultural-theory-and-theorists/what-is-a-subculture/>

Unit 2

<https://www.un.org/youthenvoy/leisure-time-activities/>
<https://www.un.org/development/desa/youth/world-youth-report.html>
https://www.un.org/esa/socdev/unyin/documents/ydiCarlesFeixa_Leisure.pdf
<https://en.unesco.org/creativity/policy-monitoring-platform/youth-culture-leisure-time>
<https://www.mapsocindia.com/my-india/lifestyle/what-is-the-impact-of-music-on-youth>
<https://www.lutherwood.ca/mentalhealth/blog/2016/popular-music-youth>
<https://student.cc.uoc.gr/uploadFiles/181-E\AEK316/Researching%20%20youth%20culture.pdf>
https://www.scirp.org/pdf/AA_2016111018100081.pdf
<https://www.cambridgescholars.com/resources/pdfs/978-1-4438-5945-5-sample.pdf>
https://www.researchgate.net/publication/333405140_Cosmopolitanism_Glocalization_and_Youth_Cultures
<https://www.academia.edu/1583989/>
[The Glocalization of Youth Culture The Global Youth Segment as Structures of Common Differencehttps://academic.oup.com/jcr/article-abstract/33/2/231/1849563?redirectedFrom=PDF](https://academic.oup.com/jcr/article-abstract/33/2/231/1849563?redirectedFrom=PDF)
The Glocalization of Youth Culture
https://www.jstor.org/stable/30095737?seq=1#metadata_info_tab_contents
<https://www.forbes.com/sites/marketshare/2011/07/01/marketing-to-youth-globally-its-childs-play/?sh=94e1bb0f610> <https://www.acrwebsite.org/volumes/8682>
<https://hedghehogreview.com/issues/youth-culture/articles/the-internet-and-youth-culture>
<https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/>
<https://cyber.harvard.edu/research/youthandmedia>

Unit 3

<https://www.loc.gov/collections/civil-rights-history-project/articles-and-essays/youth-in-the-civil-rights-movement/><https://news.un.org/en/story/2021/11/1105042> Thousands of youth

take over Glasgowstreets [https://www.hindustantimes.com/india-news/a-brief-history-of-student-protests-in-india/ story-zYvk2Geb1UVBtzjOzcLA1N.html](https://www.hindustantimes.com/india-news/a-brief-history-of-student-protests-in-india/story-zYvk2Geb1UVBtzjOzcLA1N.html)
<https://www.who.int/news-room/fact-sheets/detail/youth-violence>

Suggested Activities: Please refer to the following books :

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London

McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi

White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi

BA Semester IV – Open Elective - 4

SOC-OE – 4 Course Title : Sociology of Leisure	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

Leisure is both a necessity and luxury depending on the position of a group of people in the social structure. Sociology of Leisure provides analytical tools to understand leisure, recreation and associated concepts. It also offers insights into the class based nature of leisure, and commodification of leisure

Course Outcomes :

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

1. Describe the concept of Leisure, associated terms and types
2. Understand the relationship between Leisure and stratification
3. Analyze the Impact of commoditization of leisure

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Describe the concept of Leisure, associated terms and types	X			X				X	
Understand the relationship between Leisure and stratification	X	X	X	X	X	X		X	
Analyze the Impact of commodification of leisure	X	X	X	X			X	X	X

Content of SOC-OE -4 : Sociology of Leisure	45 Hrs
Unit – 1 Introduction	15
<p>Chapter No. 1. Definition of Leisure and its attributes; need for the study of leisure as social activity</p> <p>Chapter No.2. Leisure, Recreation, Play, Pleasure and Leisure Identity; Leisure, Work and Post work</p> <p>Chapter No.3. Types of Leisure: Serious, Casual, Postmodern, Therapeutic</p>	
Unit – 2 Constraints on Leisure Participation	15
<p>Chapter No. 4. Class Inequality and Exclusion from Leisure Participation</p> <p>Chapter No.5. Leisure Participation and Gender Relations - Leisure and Beauty System</p> <p>Chapter No.6. Leisure Participation, Age and Disability</p>	
Unit – 3 Commodification of Leisure	15
<p>Chapter No.7. Cinemas, OTTs and Reality T V</p> <p>Chapter No.8. Leisure and Sports - Adding Leisure Value like branded goods (Sony Walkman, iPod, Nike, Coke etc.); Malls as areas of leisure</p> <p>Chapter No.9. Social Media as Leisure Activity - Role in Identity Building</p>	

TEXT BOOKS

1. Best, Shaun 2010, Leisure Studies: Themes and Perspectives, Sage, New Delhi
2. Harris, David 2005, Key Concepts in Leisure Studies, Sage, New Delhi
3. Rojek, Chris 2000 Leisure and Culture, Palgrame Macmillan, New York
4. Rojek, Chris and others 2006, A Handbook of Leisure Studies, Palgrave Macmillan, New York
5. Spracklen, Karl 2015 Digital Leisure, the Internet and Popular Culture, PalgraveMacmillan, New York

Suggested Internet Resources :

Unit 1

<https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/leisure-sociological-studies>

*J Wilson Sociology of Leisure Annual Review of Sociology 1980 6:1, 21-40, <https://www.annualreviews.org/doi/abs/10.1146/annurev.so.06.080180.000321?journalCode=soc>
<https://digital.lib.washington.edu/researchworks/handle/1773/5584> A Revised Sociology of Leisure
<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1468-232X.1962.tb00658.x> The Sociology of Leisure: Some Suggestions
<https://www.cambridge.org/core/services/aop-cambridge-core/content/view/BEFB7723CC9F9D737FD9FB97C743DFD0/S1834490913000068a.pdf/div-class-title-leisure-type-leisure-satisfaction-and-adolescents-psychological-wellbeing-div.pdf>
http://samples.jbpub.com/9781284034103/9781449689568_CH01_Secure.pdf Recreation and Leisure*

Unit 2

<https://www.acrwebsite.org/volumes/9547> Social Class Determinants of Leisure Activity
<https://www.tandfonline.com/doi/abs/10.1080/01490407809512889?journalCode=ulsc20> Social Differences in Leisure Behaviour
<https://inequalitiesblog.wordpress.com/2011/07/07/leisure-inequality---what-do-the-poor-and-non-poor->
<https://www.researchgate.net/publication/286355204> Gender Identity Leisure Identity and Leisure Participation
<https://core.ac.uk/download/pdf/345078391.pdf> Gender differences in leisure-need activity patterns
<https://www.researchgate.net/publication/233269125> Leisure Participation and Enjoyment Among the Elderly Individual Characteristics and Sociability
<https://www.researchgate.net/publication/348667192> Leisure and recreation for disabilities

Unit 3

<https://www.researchgate.net/publication/240709477> Cinema halls locality and urban life
<https://www.researchgate.net/publication/343473867> A Study OTT Viewership in Lockdown and Viewer's Dynamic Watching Experience
http://164.100.47.193/Reference/News/English/16072021_150800_102120526.pdf Emergence of OTT platforms in India
<https://www.ijrar.org/papers/IJRAR2001475.pdf>
<http://gmj.manipal.edu/issues/june2020/2%20Cinema%20viewing%20in%20the%20time%20of%20OTT.pdf>
<https://www.researchgate.net/publication/326809710> Leisure Sport Activities and Their Importance in Living a Healthy Physical and Psycho-Social Lifestyle
<https://www.researchgate.net/publication/292799133> The effects of social media on leisure
<https://dergipark.org.tr/tr/download/article-cile/230009> The Role of Social Media on Leisure Preferences
Lin C.A., Atkin D. (2014) Social Media and Leisure. In: Michalos A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_1623
<https://www.tandfonline.com/doi/full/10.1080/10941665.2020.1859057> Social media, space and leisure in small cities

Suggested Activities: Please refer to the following books :

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London

McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi

White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi

BA Semester IV – Open Elective – 4

SOC-OE – 4 Course Title : Sociology of Disaster Management	
Course Credits : 3	Duration of ESA/Exam : 2 Hours
Total Content Hours : 45	Formative Assessment Marks : 40
Lecture hours per week : 3 Hours	Summative Assessment Marks : 60

Course Objectives :

This course unravels the social dimension of disasters, both natural and manmade. It provides a basic understanding of multi dimensional property of disasters and its impact on community relationships and living. The response of both the government and civil society is introduced through case studies.

Course Outcomes :

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

1. appreciate the risk taking capability and limitations of human beings
2. Recognise the impact of disasters and consequences
3. Respond sensitively with a sociological eye to disasters and their management

Pedagogy :

Blended learning, Group discussions, role play, micro project, field visit, written/oral presentation by the students

Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs)/ Program Outcomes (POs)	1	2	3	4	5	6	7	8	9
Appreciate the risk taking capability and limitations of human beings	X	X		X				X	
Recognise the impact of disasters and consequences	X	X			X	X	X		X
Respond sensitively with a sociological eye to disasters and their management	X						X	X	X

Content of SOC-OE 4 : Sociology of Disaster Management	45Hrs
Unit - 1 Introduction	15
<p>Chapter No. 1. Sociology of Disaster: Meaning and Scope; Types of Disaster: Natural, Manmade</p> <p>Chapter No.2. Meaning of Hazard, Disaster, Vulnerability, Pandemic and Risk Society</p> <p>Chapter No.3. Social Construction of Disaster by Media</p>	
Unit - 2 Consequences and Disaster Management	15
<p>Chapter No. 4. Impact on Community: Caste, Class, Gender, Children and Disabled</p> <p>Chapter No.5. Relief, Rehabilitation and Reconstruction</p> <p>Chapter No.6. National Disaster Management Authority</p>	
Unit - 3 Case Studies: Impact and Response	15
<p>Chapter No.7. Bhopal Disaster of 1984, LG Polymers Gas Leak, Visakhapatnam, 2020</p> <p>Chapter No.8. Tsunami of 2004, Uttarakhand Floods of 2013, South India Floods of 2015</p> <p>Chapter No.9. Surat Plague 1994, Covid-19</p>	

TEXT BOOKS :

1. Drabek, Thomas E, Human System Responses to Disaster: An Inventory of Sociological Findings, Springer, New York
2. Rodriguez, Havidan and others, 2018 Handbook of Disaster Research, 2nd edition,
3. Springer Tierney, Kathleen 2019 Disasters: A Sociological Approach, Polity Press, London
4. Zakour, M J and David F Gillespie 2013, Community Disaster Vulnerability: Theory, Research and

Suggested Internet Resources :

Unit 1

<https://training.fema.gov/emiweb/downloads/drabeksociologydisastersandem.pdf>

https://www.researchgate.net/publication/235287945_Emergent_phenomena_and_the_sociology_of_disaster_Lessons_trends_and_opportunities_from_the_research_literature

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8987570/>Toward a cultural sociology of disaster

<https://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/disasters-sociological-aspects>

http://www.drbramedkarcollege.ac.in/sites/default/files/Introduction_to_Hazard_Vulnerability_and_Risk.pdf

<http://osou.ac.in/eresources/role-of-media-in-disaster-management.pdf>

https://www.sjsu.edu/anthropology/docs/facultypublications/Lei.Faas.2018_Social.Production.Of_Disasters.Disaster.Social.Constructs-Final.pdf

<https://www.oecd.org/governance/risk/The%20role%20of%20Social%20media%20in%20crisis%20preparedness,%20response%20and%20recovery.pdf>

<https://preparecenter.org/topic/social-media-disasters/>

Unit 2

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjP-Yq70qL5AhX3m1YBHVmDATIQFnoECDOQAQ&url=https%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Ffem%2Fchapter%25206%2520-%2520hazard%2520vulnerability%2520and%2520risk%2520analysis.doc&usg=AOvVaw0jA>

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjP-Yq70qL5AhX3m1YBHVmDATIQFnoECDOQAQ&url=https%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Ffem%2Fchapter%25206%2520-%2520hazard%2520vulnerability%2520and%2520risk%2520analysis.doc&usg=AOvVaw0jA>

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjP-Yq70qL5AhX3m1YBHVmDATIQFnoECDOQAQ&url=https%3A%2F%2Ftraining.fema.gov%2Fhiedu%2Fdocs%2Ffem%2Fchapter%25206%2520-%2520hazard%2520vulnerability%2520and%2520risk%2520analysis.doc&usg=AOvVaw0jA>

<https://sciencing.com/impact-natural-disasters-5502440.html>

https://www.samhsa.gov/sites/default/files/dtac/srb-low-ses_2.pdf

<https://www.annualreviews.org/doi/10.1146/annurev-soc-121919-054827>

Unit 3

Many websites offer rich data about the disasters that occurred in India which can be referred

Suggested Activities: Please refer to the following books :

Johnston, Josee and others 2017, *Introducing Sociology: Using the Stuff of Everyday Life*, Routledge, London

McKinney, Kathleen and Barbara S Heys (Eds) 2009, *Sociology Through Active Learning*, 2nd Edition, Pine Forge Press, New Delhi

White, Shelley K and others (Eds) 2015, *Sociologists in Action on Inequalities*, Sage, New Delhi