



**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND COMMERCE,
(AUTONOMOUS) DOMBIVLI (EAST), DIST. THANE
(Affiliated to University of Mumbai)**

**Faculty of Commerce
DEPARTMENT OF ACCOUNTING & FINANCE
(Programme: Bachelor of Commerce in Accounting & Finance: B.Com. in A&F)**

**SYLLABUS FOR
S.Y.B.Com - Accounting & Finance (Semester III & IV)
Choice Based Credit System (CBCS)**

(With effect from the Academic Year 2022-2023)

PROGRAMME OUTCOME:

- 1) Students will be able to demonstrate progressive learning of recent trends and developments in the fields of Commerce, Accountancy and Finance.
- 2) Students will learn relevant managerial and accounting career skills, applying both quantitative and qualitative knowledge to their future careers.
- 3) Learners will be able to prove proficiency required to appear in competitive examinations and professional courses like MBA, CA, CS, ICWA and other courses.
- 4) Students will acquire the skills of effective communication, decision making, and problem-solving that can be used at personal as well as professional levels.

COURSE STRUCTURE – SYBAF

Sr. No	Course Code	Semester III	Credit Points	Course Code	Semester IV	Credit Points
01	PUCAFI22-351	Financial Accounting (Special Accounting Areas) – III	03	PUCAFI22-451	Financial Accounting (Special Accounting Areas) - IV	03
02	PUCAFI22-352	Cost Accounting (Methods of costing) – II	03	PUCAFI22-452	Management Accounting (Introduction to management accounting)	03
03	PUCAFI22-353	Taxation – I (Direct taxes – I)	03	PUCAFI22-453	Taxation - II (Direct Taxes- II)	03
04	PUCAFI22-354	Information Technology in Accountancy – I	03	PUCAFI22-454	Information Technology in Accountancy - II	03
05	PUCAFI22-355	Foundation Course (Financial Market Operations) - III	02	PUCAFI22-455	Foundation Course (Introduction to management) - IV	02
06	PUCAFI22-356	Business Law (Business Regulatory Framework) II	03	PUCAFI22-456	Business Law (Company Law) – III	03
07	PUCAFI22-357	Business Economics – II	03	PUCAFI22-457	Research Methodology in Accounting & Finance	03
		TOTAL	20		TOTAL	20

COURSE OUTCOME:

- 1) Students will learn about accounting for corporate organizations
- 2) Students will learn about functions of management and also stress management in day-to-day life
- 3) Students will learn about various investment avenues of financial markets such as stock market, derivatives market, commodity market, etc.
- 4) Students will learn about the use of information technology used in entities for various accounting practices.

SEMESTER-III

FINANCIAL ACCOUNTING (SPECIAL ACCOUNTING AREAS) - III

Course Code: PUCAFIII22 - 351

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Partnership Final Accounts based on Adjustment of Admission or Retirement / Death of a Partner during the Year.	15	03
2.	Piecemeal Distribution of Cash.	10	
3.	The amalgamation of Firms.	15	
4.	Conversion / Sale of a Partnership Firm into a Ltd. Company.	10	
5.	Issue of Shares.	10	
Total		60	

OBJECTIVES:

- The course helps aspirants to acquire knowledge in the field of accounting, taxation, auditing, risk management, financial accounting, taxation, managerial economics, and business law & business communications.
- The main aim of the program is to increase self-employment in the field of Finance.
- To help companies by providing them with suitably trained professionals in the field of accounting & finance.

LEARNING OUTCOMES:

1. Students will come to know about how the payables are settled at the time of dissolution
2. Students will be taught about the various adjustments which are made in accounts in case of admission, retirement, or death of a partner
3. Students will come to know the accounting effects when the firms are amalgamated
4. Students will learn about the issue of shares and its various methods like the issue at par and issue at a premium.

SYLLABUS

Unit No.	Module/Units	No. of lectures
1.	Partnership Final Accounts based on Adjustment of Admission or Retirement / Death of a Partner during the Year. Simple final accounts questions to demonstrate the effect on final Accounts when a partner is admitted during the year or when partner Retires / dies during the year Allocation of gross profit prior to and after admission/retirement/death when stock on the date of admission/retirement is not given and apportionment of other expenses based on time / Sales/other given basis Ascertainment of gross profit prior to and after admission/retirement/death when stock on the date of admission/retirement is given and apportionment of other expenses based on time / Sales / other given basis Excluding Questions where admission/retirement death takes place in the same year	15
2.	Piecemeal Distribution of Cash. Excess Capital Method only Asset taken over by a partner Treatment of past profits or past losses in the Balance sheet Contingent liabilities / Realization expenses/amount kept aside for expenses and adjustment of actual Treatment of secured liabilities Treatment of preferential liabilities like Govt. dues/labors etc Excluding: Insolvency of partner and Maximum Loss Method	10
3.	Amalgamation of Firms. Realization method only Calculation of purchase consideration Journal/ledger accounts of old firms Preparing Balance sheet of new firm Adjustment of goodwill in the new firm Realignment of capitals in the new firm by current accounts/cash or a combination thereof Excluding: Common transactions between the amalgamating firms	15
4.	Conversion / Sale of a Partnership Firm into a Ltd. Company. Realization method only Calculation of New Purchase consideration, Journal / Ledger Accounts of old firms. Preparing Balance sheet of the new company	10
5.	Issue of Shares. Types of shares and share capital, Understand the concept of public subscription and private placement, know the concept of under overvaluation	10

	on of shares and accounting of shares at par, at a premium and at a discount, the different accounting treatment for under and oversubscription of shares as well as calls in arrears and calls in advance.	
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LEARNER'S SPACE:

1. Students can collect information regarding Initial Public Offer and how the company raises finance through IPO.
2. Students can study and get awareness about other methods of raising finance such as Follow-on public offers.

JOB ORIENTED/ SKILL DEVELOPMENT TOPICS:

1. Practical applicability in the stock market while trading.
2. Jobs like Financial Broker in various stock exchanges, Stock Consultants.

RECOMMENDED REFERENCES BOOKS:

1. Introduction to Accountancy by T.S. Grewal, S. Chand and Company (P) Ltd., New Delhi
2. Advance Accounts by Shukla and Grewal, S. Chand and Company (P) Ltd., New Delhi
3. Advanced Accountancy by R.L Gupta and M. Radhaswamy, S. Chand and Company (P) Ltd., New Delhi
4. Modern Accountancy by Mukherjee and Hanif, Tata Mc. Grow Hill and Co. Ltd., Mumbai
5. Financial Accounting Ltd., New DeLesliesile Chandwichk, Prentice Hall of India Adin Bakley (P)
6. Financial Accounting for Management by Dr. Dinesh Harsalekar, Multi-Tech. Publishing Co. Ltd., Mumbai
7. Financial Accounting by P.C. Tulsian, Pearson Publications, New Delhi
8. Accounting Principles by R.N. Anthony and J.S. Reece, Richard Irwin, Inc
9. Financial Accounting by Monga, J.R. Ahuja, Girish Ahuja and Ashok Shehgal, Mayur Paper Back, Noida.

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/watch?v=zvLukYihpQQ>
2. <https://www.youtube.com/watch?v=-gAA7OatRJu>
3. <https://www.youtube.com/watch?v=5xxam8M6toI>

LIST OF MOOC PROGRAMS:

1. TCS 15-days free Digital Certification Course for students & Professionals.

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Practical Question OR Q.2 Full-length Practical Question	15
Q.3	Q.3 Full-length Practical Question OR Q.3 Full-length Practical Question	15
Q.4	Q. 4 Full-length Practical Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

COST ACCOUNTING (METHODS OF COSTING) - II

Course Code: PUCAFIII22 - 352

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Overheads	15	03
2.	Reconciliation of cost and financial accounts	15	
3.	Contract Costing	15	
4.	Process Costing	15	
Total		60	

OBJECTIVES:

- To prepare learners to understand the Scope of Cost Accounting in any business activity
- To learn the Cost Accounting treatment about overheads.
- To understand the difficulties and implementation of Life cycle costing, kaizen costing, Just-in-time and target costing.
- To understand the terms used in contract costing and recognition of expected profit or loss of contract.

LEARNING OUTCOMES:

1. The course is designed to gain proficiency in Cost Accounting.
2. Demonstrate the understanding of the cost behavior
3. Students can understand the current trends in cost accounting.

SYLLABUS

Unit No.	Module/Units	No of Lectures
1.	Overhead Overheads: The Concept Classification of Overheads on different bases Apportionment and absorption of overheads	15
2.	Reconciliation of cost and financial accounts Practical problems based on a reconciliation of cost and Financial accounts Emerging Trends: a) Just-in-Time (JIT) b) Kaizen Costing c) Target Costing d) Life Cycle Costing	15
3.	Contract Costing Progress payments, Retention money, Contract accounts, Accounting for material, Accounting for Tax deducted at source by the contractee, Accounting for plant used in a contract, treatment of profit on incomplete contracts, Contract profit, and Balance sheet entries. Escalation clause, practical problems	15
4.	Process Costing Process loss, Abnormal gains, and losses, Joint products, and by-products. Excluding Equivalent units, Inter-process profit Practical problems Process Costing and joint and by-products	15

LEARNER'S SPACE:

1. We can ask students to visit the construction site and collect the data about cost sheets
2. We can ask students to visit any manufacturing industry so they will come to know about the flow of process costing

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

1. Just-in-time
2. Kaizen costing
3. Target costing
4. Life cycle costing

RECOMMENDED REFERENCES BOOKS:

1. Cost Accounting by Dr. B. K. Mehta
2. Cost Accounting by Prof. M.L. Agarwal and Dr. K. L. Gupta.
3. Cost Accounting by M.N. Arora
4. ICAI Intermediate Course - Cost and Management Accounting
5. ICMAI CMA Cost Accounting

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/watch?v=5gUW0rkIJcQ>
2. <https://www.youtube.com/watch?v=7x1Y2apUx-I&t=1249s>
3. <https://www.youtube.com/watch?v=H0q2qAAanubI&t=417s>
4. <https://www.youtube.com/watch?v=pzzku4PqdHQ>
5. <https://www.youtube.com/watch?v=pf2SieyGqLQ>
6. https://www.youtube.com/watch?v=4_FSrJb6sTc
7. <https://www.youtube.com/watch?v=dMtPYmwo8e8&t=41s>
8. <https://www.youtube.com/watch?v=rOaOj7Rt1yc>

LIST OF MOOC PROGRAMS:

1. Swayam – Prof. Varadraj Bapat (IIT Bombay) – Cost Accounting

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Practical Question OR Q.2 Full-length Practical Question	15
Q.3	Q.3 Full-length Practical Question OR Q.3 Full-length Practical Question	15
Q.4	Q. 4 Full-length Practical Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

TAXATION (DIRECT TAX - I) - I

Course Code: PUCAFIII22 - 353

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Definitions u/s – 2, Basis of Charge and Exclusions from Total Income	10	03
2.	Heads of Income	25	
3.	Deductions under Chapter VI A	05	
4.	Computation of Total Income	15	
Total		60	

OBJECTIVES:

- To help students to know about the basic computation of taxable income
- To inculcate the knowledge of different heads of income for computation
- To help them understand the benefits of exemptions and deduction

LEARNING OUTCOMES:

1. Students will be equipped with an understanding of different heads of income
2. They will be possessing knowledge about different basis of charging income tax
3. Students will have the knowledge of benefits and deduction that is available as per income tax

SYLLABUS

Unit No.	Module/Units	No. of Lectures
1.	Definitions u/s – 2, Basis of Charge and Exclusions from Total Income Definitions u/s – 2: Assessee, Assessment Year, Assessment, Annual value, Business, Capital asset, Income, Person, Previous Year, Transfer Basis of Charge: Section 3 – 9 – Previous Year, Residential Status, Scope Of Total Income, Deemed Income	10
2.	Heads of Income Various Heads of Income Salary Income: Section 15 – 17, Including Section 10 relating to House Rent Allowance, Travel Concession, Special Allowance, Gratuity, Pension – Commutation, Leave Encashment, Compensation, Voluntary Retirement, Payment from Provident Fund Income From House Property: Section 22 – 27, Including Section 2 – Annual Value Profits & Gains From Business & Profession : Vocation Section 28-32, 36, 37, 40, 40A, 43B, 44AD, 44ADA & 44AE including.: Section 2 – Business Capital Gains : Section 45, 48, 49, 50, 54 and 55 Income from Other Sources: Section 56 – 59	25
3.	Deductions under Chapter VI-A 80 A 80 C 80CCC 80CCD 80D 80 DD 80DDB 80E 80EE 80G 80 TTA 80TTB 80U	05
4.	Computation of Total Income Computation of Total Income of Individual and HUF with respect to above heads and deductions	15

LEARNER'S SPACE:

1. Self-computation of Income.
2. Applications of income tax law.
3. Certificate course on e-filing of income tax returns

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

1. Heads of income
2. Deduction u/c VIA
3. Computation of total income

RECOMMENDED REFERENCE BOOKS:

1. Direct Taxes Law & Practice by V.K. Singhania – Taxman
2. Systematic Approach to Direct Tax by Ahuja & Gupta - Bharat Law House
3. Income Tax Ready Reckoner by Dr . V.K. Singhania – Taxman
4. Direct Tax Laws by T.N. Manoharan - Snow White

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/user/1dilipbadlani>
2. <https://www.youtube.com/c/ChandanPoddar/videos>
3. <https://www.youtube.com/c/NitinGoel/videos>

LIST OF MOOC PROGRAMS:

1. Udemy – Direct Taxation in India - A Comprehensive study
2. The Institute of Cost Accountants of India – Certificate Courses on GST
3. Swayam - By Prof. (Dr.) Subhrangshu Sekhar Sarkar – Direct Tax – Laws and Practice

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Practical Question OR Q.2 Full-length Practical Question	15
Q.3	Q.3 Full-length Practical Question OR Q.3 Full-length Practical Question	15
Q.4	Q. 4 Full-length Practical Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

INFORMATION TECHNOLOGY IN ACCOUNTANCY - I

Course Code: PUCAFIII22 - 354

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Introduction to Computers	10	03
2.	Office Productivity Tools	20	
3.	Web	5	
4.	Introduction to Internet and other emerging technologies	15	
5.	Electronic Commerce	10	
Total		60	

SYLLABUS OBJECTIVES:

- To learn basic concepts of Information Technology
- To provide practical hands-on training required for office automation. It is expected to have practical sessions of latest MS-Office tools
- To understand basic concepts of Email, Internet and websites, domains, and security.
- To recognize security aspects of IT in business, highlighting electronic transactions, advanced security features

LEARNING OUTCOMES:

- 1) Students will learn of the history of computers along with hardware and software
- 2) Students will learn about various MS-Office tools along with other areas such as preparation of vouchers, invoices, etc.
- 3) Students will learn about Electronic Data Exchange along with other emerging technologies such as cloud computing, artificial intelligence, and digital marketing.

SYLLABUS

Unit No.	Module/Units	No. of Lectures
1.	Introduction to Computers: Introduction to Computers History of Computers Parts of Computers Hardware: Specifications and Data Storage Management Softwares: Concept of System Software and Applications Networking: Introduction and types of network topologies	10
2.	Office Productivity Tools: MS Word: Creating, Editing, Formatting, and Printing of Documents, Using Tools, Mailmerge and Print Review and Set-up MS Excel: Creating Worksheet, Creating Various Formulae, Creating Charts, Rename and Copy of Worksheets, Using Tools, Printing Review and Set-up PowerPoint: Create Project Report, Create Slides, Animation, Page Designing, Insert Image, View Page, Print Review and Set-up. Use of Tools In Accounting: Preparation of vouchers, invoices, and reports, Calculation of Interest, Depreciation, TDS, Salary, Taxes, inventory, and reconciliation	20
3.	Web: Use of Various Web Browser Information Searching Tools Downloading Create New email ID Sending Data through email Search engine optimization	5
4.	Introduction to the internet and other emerging technologies: Introduction – Internet components – Electronic Data Exchange – Extranet – Payment systems – Risks and security considerations – Legal issues – Other emerging technologies, Emerging Technologies- Cloud computing, Artificial Intelligence, Digital Marketing	15
5.	Electronic Commerce: Meaning, Advantages, and Limitations of E-Commerce, The role of Strategy in E-Commerce, Value chains in E-Commerce, Infrastructure for Electronic Commerce Web-Based Tools for Electronic Commerce, Electronic Commerce software, Security Threats to electronic	10

	Commerce, Implementing Security for Electronic Commerce, Electronic Payment Systems, Strategies for Marketing, Sales & Promotion Strategies for Purchasing Logistics & Support Activities, Electronic Markets & Communities, Business Plans for Implementing Electronic Commerce.	
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LEARNER'S SPACE:

1. Encouraging students to learn free certification courses from Udemy and IBM.
2. Suggesting students read news about current Technology.
3. Students are asked to prepare ppt and present the information they have collected through various sources.

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

1. Cloud computing
2. Artificial Intelligence
3. Office Productivity Tools
4. Digital Marketing

RECOMMENDED REFERENCES BOOKS:

1. Tata McGraw P.T: Ecommerce An Indian Perspective (Ch-13, Ch-14)
2. Fundamentals of Computers – Rajaram V – Prentice Hall
3. Introduction to Computers – Xavier C. – New Age
4. Internet for Business – Brummer, Lavrej – Cambridge
5. E-mail for Everyone – Leon Alexis & Leon – Mathews Basic Computer Programmes for Business – Sternberg C – New Jersey Hayden

RECOMMENDED ICT BACKUP:

1. https://www.tutorialspoint.com/computer_fundamentals/computer_generations.html
2. <https://www.webfx.com/blog/web-design/the-history-of-computers-in-a-nutshell/>
3. <https://azure.microsoft.com/en-in/overview/what-is-cloud-computing/#cloud-deployment-types>

LIST OF MOOC PROGRAMS:

1. Excel for Data Management – The University of British Columbia (Platform – edX)
2. Digital Marketing Strategy – The University of Edinburgh (Platform – edX)
3. Basic Network and Database Security – IBM (Platform – edX)

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length theory Question OR Q.2 Full-length theory Question	15
Q.3	Q.3 Full-length theory Question OR Q.3 Full-length theory Question	15
Q.4	Q.4 Full-length theory Question OR Q.4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

FOUNDATION COURSE (FINANCIAL MARKET OPERATIONS) - III

Course Code: PUCAFIII22 - 355

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Overview of Indian Financial System	05	02
2.	Financial Markets	15	
3.	Financial Instruments	10	
4.	Commodity Markets	15	
Total		60	

SYLLABUS OBJECTIVES:

- To provide an overview of the Indian equity market, growth, and development. This would help them develop a good understanding of the primary and secondary markets in the equity market.
- To understand the various components of the primary and secondary market for equity in India.
- To learn about different financial instruments.
- To study about purchase and sale of commodities by providing hedging facilities.

LEARNING OUTCOMES:

- 1) Students will come to know about the Indian financial system and various banking and non-banking financial intermediaries that promote savings and investment.
- 2) Students will come to know about various financial markets and financial instruments to invest and earn money.
- 3) Students will learn about a different avenue of investment which is the commodity market and how they function.

SYLLABUS

Unit No.	Module/Units	No. of lectures
1.	Overview of Indian Financial System Saving and Investment Money Inflation and Interest Banking and Non-Banking Financial Intermediaries	05
2.	Financial Markets Financial Markets: Introduction and meaning, Government Economic Philosophy and Financial Market, Structure of Financial Market in India Capital Market: Introduction and meaning, Concept, Role, Importance, Evolution in India, Primary Market System and Regulations in India, Secondary Market System Bond Market in India Debt Market in India Indian Companies linked with international markets (Listing of Indian companies in the international market)	15
3.	Financial Instruments Meaning and Types of Financial Instruments Characteristics of Financial Instruments: Liquidity, Maturity, Safety, and Yield REPO, TBs, Equities, Bonds, Derivatives, others	10
4.	Commodity Markets Introduction, Meaning, History, Features, Types, Advantages & Disadvantages, How commodity market works, Key Participants in Commodity Market	15

LEARNER'S SPACE:

- 1) Students can explore the knowledge of DEMAT Account and Trading account
- 2) Practically trading and investing using various platforms like Zerodha Trading.

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

1. Hedging & Speculating
2. Intra-day trading
3. Mutual fund advising and broking

RECOMMENDED REFERENCES BOOKS:

1. Financial Market Operations - Manan Prakashan “Dr. V.S. Kannan & Vaibhav Ashar”
2. Financial Market Operations - Vipul ‘s “Jia Makhija”
3. Commodity Markets & Derivatives - “Niti Nandini Chatnani”
4. Financial Marketing Operation 3rd Edition - (English, Paperback, Dr. F. C. Sharma)

RECOMMENDED ICT BACKUP: -

1. <https://www.samco.in/demat-account> - DMAT Account introduction
2. <https://www.angelone.in/knowledge-center/share-market/how-to-trade-in-indian-share-market> - HOW TO INVEST IN STOCKS: BEGINNER’S GUIDE
3. http://www1.nseindia.com/education/content/module_ncfm.htm-NSE Certification Courses
4. <https://www.youtube.com/watch?v=cXjbB9TuQeo> - Zerodha Trading Tutorial with Buy & Sell Process
5. <https://www.udemy.com/topic/stock> - Stock Trading Courses

LIST OF MOOC PROGRAMS:

1. IIM (Platform - edX) – Introduction to Banking and Financial Markets – I
2. International Monetary Fund (Platform – edX) – Financial Market Analysis
3. New York Institute of Finance (Platform – edX) – A comprehensive survey of capital markets

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length theory Question OR Q.2 Full-length theory Question	15
Q.3	Q.3 Full-length theory Question OR Q.3 Full-length theory Question	15
Q.4	Q.4 Full-length theory Question OR Q.4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

BUSINESS LAW (BUSINESS REGULATORY FRAMEWORK) - II

Course Code: PUCAFIII22 - 356

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	The Indian Partnership Act – 1932	20	03
2.	Limited Liability Partnership Act – 2008	10	
3.	Factories Act – 1948	15	
4.	Intellectual Property Rights	15	
Total		60	

OBJECTIVES:

- To learn about the working of a partnership firm (unlimited liability & limited liability)
- To ensure adequate safety measures in the factory premises
- To encourage innovation and to provide incentives for innovation by granting protection to inventors

LEARNING OUTCOMES:

- 1) Students will come to know about what rules and regulations are to be abided by law to start a partnership firm
- 2) Students will come to know about a new type of partnership firm which is a combination of partnership firm and company known as LLP
- 3) Students will come to know about the rules and regulations to be followed by every factory in day-to-day operations
- 4) Students will come to know about various IPR's such as patents, trademarks, copyrights, industrial designs, etc.

SYLLABUS:

Unit No.	Module/Units	No. of lectures
1.	The Indian Partnership Act - 1932 a) Concept of Partnership - Partnership and Company - Test for determination of existence for partnership - Kinds of partnership b) Registration and effects of non-registration of Partnership c) Rights and Duties of Partners d) Authority and Liability of partners e) Admission, Retirement, and Expulsion of Partner f) Dissolution of Partnership	20
2.	Limited Liability Partnership Act - 2008 a) Concept, Formation, Membership, and Functioning of Partnership b) Dissolution of Partnership	10
3.	Factories Act - 1948 a) Definitions, Section 2 (k) – Manufacturing Process, Section 2 (l) – Workers, Section 2 (m)– Factory b) Provisions pertaining to (i) Health- Section 11 to Section 20 (ii) Safety- Section 21 to Section 41 (iii) Welfare- Section 42 to Section 49 Maternity Benefit Act - 1961 Introduction, Objective of Maternity Benefit Act, Benefits under ESI Act 1948, Eligibility of Maternity Benefits, Amendments in 2017	15
4.	Intellectual Property Rights Meaning, Relevance, Business Impact, Protection of Intellectual Property, Copyrights, Trademarks, Patents, Designs, Utility Models, Trade Secrets, and Geographical Indications - Bio-diversity and IPR, Competing Rationales for Protection of Intellectual Property Rights	15

LEARNER'S SPACE:

- 1) Students can opt for the certification courses for law.
- 2) Students can do more research on how to acquire a patent for any product.

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

- 1) Patent Analysis
- 2) Legal Process Outsourcing
- 3) Drafting of partnership deeds

RECOMMENDED REFERENCES BOOKS:

1. “Business Law” Sheth Publication - V.S. Gopal & Dr. Sumathi Gopal
2. “Business Law” Manan Prakashan - Lata Nagarkar
3. “Business Law” Vipul Publication - Kalaivani Venkataraman
4. “Intellectual Property Rights” Lexis Nexis - V.K. Ahuja

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/watch?v=7MRQbWMoSSM> - Partnership Firm 1932
2. <https://www.youtube.com/watch?v=sgapxJUaJnM> - Limited Liability Partnership Act 2008
3. <https://www.youtube.com/watch?v=9QM-3LMeBQA> - Factories Act 1948
4. <https://www.youtube.com/watch?v=OywVt40Tb5g> - Vijay Gas Tragedy
5. <https://www.ficciipcourse.in/> - Certification courses on IPR by FICCI
6. <https://www.citehr.com/tags.php?tag=factory+act> - Discussions and queries on Factories Act
7. <https://www.google.com/search> - New amendments in Factories Act
8. <https://www.youtube.com/watch?v=S5UOIG1qnnw> - Maternity Act 1961

LIST OF MOOC PROGRAM

1. IIM Bangalore (Platform - edX) - Intellectual Property Rights: A Management Perspective
2. University of Maryland (Coursera) - Intellectual Property for Entrepreneurs

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length theory Question OR Q.2 Full-length theory Question	15
Q.3	Q.3 Full-length theory Question OR Q.3 Full-length theory Question	15
Q.4	Q.4 Full-length theory Question OR Q.4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

BUSINESS ECONOMICS - II
Course Code: PUCAFIII22 - 357

MODULES AT GLANCE:

Unit No.	Modules	No. of Lectures	Credit Points
1.	Module 1: Introduction to Macroeconomics	15	03
2.	Module 2: Money, Inflation and Monetary Policy	15	
3.	Module 3: Constituents of Fiscal Policy	15	
4.	Module 4: Open Economy: Theory and Issues of International Trade	15	
Total		60	

OBJECTIVES:

- Providing basic and practical knowledge about macroeconomics helps to understand and analyze the economy as a whole.
- To inculcate understanding relating to Functioning of Economy.
- To give practical knowledge through graphs.

LEARNING OUTCOMES:

- 1) Students can get wide knowledge about macroeconomic concepts and graphical explanations.
- 2) Students will get aware of the concept of money and the importance of money in an economy
- 3) Students will get information about the role of government in the economy
- 4) Students can get a holistic understanding of international trade.

SYLLABUS:

Unit No.	Module/Units	No. of Lectures
1.	Module 1: Introduction to Macroeconomics <ul style="list-style-type: none"> ● Macroeconomics: Meaning, Scope, and Importance. ● Circular flow of Aggregate Income and Expenditure: closed and open economy models ● The Measurement of National Product: Meaning and Importance - conventional and Green GNP and NNP concepts - Relationship between National Income and Economic Welfare. ● Short-run Economic Fluctuations: Features and Phases of Trade Cycles ● The Keynesian Principle of Effective Demand: Aggregate Demand and Aggregate Supply - Consumption Function - Investment function effects of Investment function - effects of Investment Multiplier on Changes in Income and Output. 	15
2.	Module 2: Money, Inflation and Monetary Policy <ul style="list-style-type: none"> ● Money Supply: Determinants of Money Supply - Factors influencing Velocity of Circulation of Money ● Demand for Money: Classical and Keynesian approaches and Keynes' liquidity preference theory of interest ● Money and prices: Quantity theory of money, Fisher's equation of exchange, Cambridge cash balance approach ● Inflation: Demand-Pull Inflation and Cost-Push Inflation, Effects of Inflation ● Monetary policy: Meaning, objective and instruments, Stagflation, Philips curve 	15
3.	Module 3: Constituents of Fiscal Policy <ul style="list-style-type: none"> ● Role of a Government to provide public goods- Principles of Sound and Functional Finance ● Fiscal Policy: Meaning, Objectives - Contra cyclical Fiscal Policy and Discretionary Fiscal Policy 	15

	<ul style="list-style-type: none"> ● Instruments of Fiscal policy: Canons of taxation - Factors influencing the incidence of taxation - Effects of taxation Significance of Public Expenditure - Social security contributions- Low-Income Support and Social Insurance Programmes - Public Debt - Types, Public Debt and Fiscal Solvency, Burden of debt finance ● Union Budget -Structure: Deficit concepts -Fiscal Responsibility and Budget Management Act. 	
4.	<p>Module 4: Open Economy: Theory and Issues of International Trade</p> <ul style="list-style-type: none"> ● The Basis of International Trade: Ricardo's Theory of comparative cost advantage - The Heckscher-Ohlin theory of factor endowments- terms of trade - meaning and types Factors determining terms of trade - Gains from trade - Free trade versus protection ● Foreign Investment: Foreign Portfolio investment- Benefits of Portfolio capital flows Foreign Direct Investment - Merits of Foreign Direct Investment - Role of Multinational corporations ● Balance of Payments: Structure -Types of Disequilibrium - Measures to correct disequilibrium in a BOP. ● Foreign Exchange and Foreign Exchange Market: Meaning of foreign exchange market Spot and Forward rate of Exchange. ● Role of Central Bank in foreign exchange rate management, FERA and FEMA Act. ● Exchange Currency appreciation and currency depreciation, currency convertibility. 	15

LEARNER'S SPACE:

1. Students can go for bank visits to understand the actual working of commercial bank
2. Students can engage in discussion on case studies
3. Students can do detailed research on current economic topics
4. Students can do analysis and watch the presentation of Union Budget
5. Students can do a field visit to exporting companies for understanding their working process

JOB ORIENTED/SKILL DEVELOPMENT TOPICS:

1. Fiscal and Monetary Policy framing and implementation
2. Statistician and economic advising
3. Investment advising

RECOMMENDED REFERENCES BOOKS:

1. Ackley. G (1976), Macro-Economic Theory and Policy, Macmillan Publishing Co. New York
2. Ahuja. H.L., Modern Economics — S.Chand Company Ltd. New Delhi.
3. Bhatia H.L.: Public Finance. Vikas Publishing House Pvt. Ltd
4. Dornbush, Fisher and Startz, Macroeconomics, Tata-Mac Graw Hill, New Delhi.
5. Friedman Hilton (1953) Essays in Positive Economics, University of Chicago Press, London
6. Francis Cherunilam International Economics Tata McGraw – Hill Publishing co.Ltd.New Delhi.
7. Gregory .N. Mankiw, Macroeconomics, Fifth Edition (2002) New York: Worth Publishers
8. Jhingan, M.L., Principles of Economics — Vrinda Publications (P) Ltd.
9. Musgrave, R.A and P.B. Musgrave (1976): Public Finance in Theory and Practice, Tata McGraw Hill, Kogakusha, Tokyo
10. Shapiro, E (1996), Macro-Economic Analysis, Golgotha Publication, New Delhi.
11. Singh. S.K. (2014): Public finance in Theory and Practice, S.Chand &co Pvt Ltd, New Delhi
12. Salvatore Dominick – International Economics – John Wiley & sons, Inc Singapore
13. Vaish. M.C. (2010) Macro-Economic Theory 14th edition, Vikas Publishing House(P)Ltd

RECOMMENDED ICT BACKUP: -

1. [https://en.wikipedia.org › wiki › Inflation](https://en.wikipedia.org/wiki/Inflation)
2. [https://en.wikipedia.org › wiki › Monetary_policy_](https://en.wikipedia.org/wiki/Monetary_policy_)
3. **Highlights of Union Budget 2021 – YouTube**
4. [https://www.youtube.com › watch](https://www.youtube.com/watch)
5. [https://en.wikipedia.org › wiki › Balance_of_payments](https://en.wikipedia.org/wiki/Balance_of_payments)
6. [https://en.wikipedia.org › wiki › Foreign_portfolio_inv...](https://en.wikipedia.org/wiki/Foreign_portfolio_inv...)

LIST OF MOOC PROGRAMS:

1. DOANEX (Platform edX) – Macroeconomics – The Basics
2. The University of Queensland (Platform edX) – International Economics

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length theory Question OR Q.2 Full-length theory Question	15
Q.3	Q.3 Full-length theory Question OR Q.3 Full-length theory Question	15
Q.4	Q.4 Full-length theory Question OR Q.4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

SEMESTER-IV

FINANCIAL ACCOUNTING (SPECIAL ACCOUNTING AREAS) - III

Course Code: PUCAFIV22 - 451

MODULES AT GLANCE:

Sr. No.	Modules	Lectures	Credit points
1.	Preparation of Final Accounts of Companies	15	03
2.	Redemption of Preference Shares	10	
3.	Redemption of Debentures	15	
4.	Ascertainment and Treatment of Profit Prior to Incorporation	10	
5.	Buyback of Shares	10	
	Total	60	

OBJECTIVES:

- The course helps aspirants to acquire knowledge in the field of accounting, taxation, auditing, risk management, financial accounting, taxation, managerial economics, business law & business communications.
- The main aim of the program is to increase self-employment in the field of Finance.
- To help companies by providing them with suitably trained professionals in the field of accounting & finance.

LEARNING OUTCOMES:

- Students can understand that how to deal with the procedure of redemption of Preference shares and Debentures.
- The effect of a buyback is to reduce the number of outstanding shares on the market, which increases the ownership stake of the stakeholders.
- Apply critical thinking skills by identifying and analysing accounting issues using relevant accounting frameworks.

SYLLABUS

Unit No	Modules/Units	Lectures
I	Preparation of Final Accounts of Companies Relevant provisions of Companies Act related to preparation of Final Account (excluding cash flow statement) Preparation of financial statements as per Companies Act. (Excluding cash flow statement) AS 1 in relation to final accounts of companies (disclosure of accounting policies)	15
II	Redemption of Preference Shares Provision of the Companies Act for redemption of Preference Shares (Sec 55 of the Companies Act, 2013), Companies (Share and Debentures) Rules. Methods of Redemption of fully paid-up Preference Shares as per Companies Act, 2013: The proceed of a fresh issue of shares, the capitalisation of undistributed profits and a combination of both calculation of minimum fresh issue to provide the fund for redemption, (Question on entries and/or Balance Sheet) Note: Companies governed by Section 133 of the Companies Act, 2013 and comply with the accounting standards prescribed for them. Hence, the balance in security premium account not to be utilised for premium payable on redemption of preference shares.	10
III	Redemption of Debentures Introduction: Provisions of Section 71 (1) and (4) of the Companies Act, 2013, Creation and investment of DRR including The Companies (Share Capital and Debentures) Rules, 2014, the methods of writing-off discount/loss on issue of debentures; Terms of issue of debentures Methods of redemption of debentures: By payment in lump sum and by payment in instalments (excluding from by purchase in open market), Conversion. (Question on entries. ledgers and/or Balance Sheet and /or redemption of preference shares)	15
IV	Ascertainment and Treatment of Profit Prior to Incorporation Principles for ascertainment Preparation of separate, combined and columnar, Profit and Loss Account including different basis of allocation of expenses/ incomes.	10
V	Buyback of Shares Company Law / Legal provisions (including related restrictions, power, transfer to capital redemption reserve account and prohibitions). Compliance of conditions including sources, maximum limits and debt equity ratio.	10

	Cancellation of Shares Bought back (Excluding Buy Back of minority shareholding) Practical problems	
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LEARNER SPACE:

- We can ask students to bring different companies' final accounts, which they will discuss in lecture.
- Students may understand that Share buyback is when a company buys back its own shares from investors or stakeholders. It can be seen as an alternative, tax-efficient way to return money to shareholders.
- Students may understand that a company must follow the conditions for the purpose of redemption of its redeemable preference shares
- Financial accounting courses introduce students to the practical application of financial accounting principles.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

1. Final Accounts of Companies
2. Profit Prior to Incorporation

RECOMMENDED REFERENCES BOOKS:

1. Financial Accounting by Williams, Tata Mc. Grow Hill and Co., Ltd., Mumbai.
2. Financial Accounting by V. Rajasekaran, Pearson Publications, New Delhi.
3. Introduction to Financial Accounting by Horngren, Pearson Publications, New Delhi.
4. Financial Accounting by M. Mukherjee and M. Hanif, Tata McGraw Hill Education Pvt. Ltd., New Delhi.
5. Financial Accounting a Managerial Perspective, Varadraj B. Bapat, Mehul Raithatha, Tata McGraw Hill Education Pvt. Ltd., New Delhi

RECOMMENDED ICT BACKUP: -

1. <https://www.gc11.ac.in/uploads/elearning/Redumption%20of%20Preference%20Shares1553331361.pdf>
2. <https://groww.in/p/redemption-of-debentures/>
3. https://www.icsi.edu/media/filer_public/4e/f1/4ef1d2d3-21224bafb7b71de3d6d13277/article_on_buyback.pdf

LIST OF MOOC PROGRAMS:

Learn redemption of preference shares online – graduate guru

MANAGEMENT ACCOUNTING (INTRODUCTION TO MANAGEMENT ACCOUNTING)

Course Code: PUCAFIV22 - 352

MODULES AT GLANCE:

Sr. No.	Modules	Lectures	Credit points
1.	Introduction to Management Accounting	05	03
2.	Analysis and Interpretation of Accounts	10	
3.	Financial Statement Analysis: Ratio analysis	15	
4.	Cash Flow Analysis	15	
5.	Cash Budget / Treasury Management	15	
	Total	60	

OBJECTIVES:

- To enhance the abilities of learners to develop the concept of management accounting and its significance in the business.
- To enhance the abilities of learners to analyze financial statements.
- To enable the learners to understand, develop and apply the techniques of management accounting in the financial decision making in the business corporates.

LEARNING OUTCOMES:

By the end of this course, students will be able:

1. To understand the basic concepts of Management accounting.
2. To Prepare and analyze vertical financial statements.
3. To analyze the financial statements through the calculation of different ratios.
4. To study the analysis of the cash flow statement.
5. To understand the importance of cash budgeting.

SYLLABUS

Unit no	Modules/Units	Lectures
1	Introduction to Management Accounting Meaning, Features, Scope, Importance, Functions, role of Management Accounting, Management Accounting Framework, Tools, Management Accounting and Financial Accounting	05
2	Analysis and Interpretation of Accounts a) Vertical Forms of Balance Sheet and Profit and Loss Account suitable for analysis b) Trend Analysis. c) Comparative Statement. d) Common Size Statement NOTE: Practical Problems based on the above (a) to (d)	10
3	Financial Statement Analysis: Ratio analysis Meaning of Financial Statement Analysis, steps, Objective, and types of Analysis. Ratio analysis: Meaning, classification, Du Point Chart, advantages, and Limitations. Balance Sheet Ratios: i) Current Ratio ii) Liquid Ratio iii) Stock Working Capital Ratio iv) Proprietary Ratio v) Debt Equity Ratio vi) Capital Gearing Ratio Revenue Statement Ratios: i) Gross Profit Ratio ii) Expenses Ratio iii) Operating Ratio iv) Net Profit Ratio v) Net Operating Profit Ratio vi) Stock Turnover Ratio Combined Ratio i) Return on Capital employed (Including Long Term Borrowings) ii) Return on proprietor's Fund (Shareholders Fund and Preference Capital) iii) Return on Equity Capital iv) Dividend Pay-out Ratio v) Debt Service Ratio vi) Debtors Turnover vii) Creditors Turnover	15
4	Cash Flow Statement Preparation of Cash Flow Statement concerning Accounting Standard No .3. (Indirect method only))	15
5	Cash Budget / Treasury Management Meaning of Budget, Need, and Objective of Budget. Advantage and limitation of Budget, Preparation of Cash Budget, Practical Questions on Cash Budget	15

LEARNER SPACE:

1. Students can analyze the financial statements of the company through Trend analysis, Comparative statements.
2. Students can interpret the financial statements with the help of various ratios.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

1. Cash Budget
2. Ratio Analysis
3. Cash Flow Analysis

RECOMMENDED REFERENCES BOOKS:

- Advanced Accounts by M. C. Shukla, T.S. Grewal, S.C. Gupta
- 2 Management Accounting by M. E. Thukaram Rao
- Cost & Management Accounting by Ravi M Kishore
- Cost & Management Accounting by M. N.Arora

RECOMMENDED ICT BACKUP: -

1. <https://resource.cdn.icai.org/62045bos50398cp4u2.pdf>
2. <https://www.investopedia.com/terms/c/cashbudget.asp>
3. <https://courses.lumenlearning.com/sac-managacct/chapter/cash-budgets/>
4. <https://www.dynamictutorialsandservices.org/2018/10/management-accounting-notes.html>
5. <https://www.investopedia.com/terms/r/ratioanalysis.asp>

LIST OF MOOC PROGRAMS:

1. COST ACCOUNTING – SWAYAM
2. FINANCIAL ACCOUNTING – NPTEL
3. FINANCIAL ACCOUNTING – NPTEL
4. MANAGEMENT ACCOUNTING – NPTEL
5. MANAGEMENT ACCOUNTING - NPTEL

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Practical Question OR Q.2 Full-length Practical Question	15
Q.3	Q.3 Full-length Practical Question OR Q.3 Full-length Practical Question	15
Q.4	Q. 4 Full-length Practical Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

TAXATION (DIRECT TAX –II) – II

Course Code: PUCAFIV22 - 453

MODULES AT GLANCE:

Sr. No.	Module/Units	No of lectures	Credit Point
1.	Clubbing of Income	05	03
2.	Set Off & Carry Forward of Losses	05	
3.	Computation of Tax liability of Individual & HUF	10	
4.	Computation of Income of Partnership Firm in Relation to Sec: 40(b) & Tax Thereon with Applicable Rate of Tax	10	
5.	Return of Income	05	
6.	Assessments	05	
7.	Tax Deduction at Source Advance Tax, Interest Payable	10	
8.	DTAA	05	
9.	Tax Planning & Ethics in Taxation Basic Concepts	05	
	Total	60	

OBJECTIVES:

- To make students aware about the tax liability of Individual, HUF and Firms
- To explain the procedure for filing of return of income
- To make them aware about different aspects of TDS, Advance tax and Interest
- To understand the ethics in tax planning

LEARNING OUTCOMES:

1. Student will be able to compute self-assessed tax and file the return
2. They will be equipped with knowledge of tax liability of partnership firm
3. Students will be able to compute TDS, advance tax and interest relating to income tax
4. Students understand the importance of ethical tax planning and how to refrain from tax evasion

SYLLABUS

Sr. No.	Module/Units	No of lectures
UNIT-I	Clubbing of Income Section 60 to 65	05
UNIT-II	Set Off & Carry Forward of Losses Sec: 70 Sec: 71 Sec: 71B Sec: 72 Sec: 73 Sec: 74	05
UNIT-III	Computation of Tax liability of Individual & HUF	10
UNIT- IV	Computation of Income of Partnership Firm in Relation to Sec: 40(b) & Tax Thereon with Applicable Rate of Tax	10
UNIT-V	Return of Income Sec 139 Excluding u/s 139(4A), 139(4B), 139(4C) & 139 (4D)	05
UNIT-VI	Assessments Summary assessment Sec 143(1), Scrutiny assessment Sec. 143(3), Best Budget Assessment Sec. 144, Faceless Assessment Sec. 144B, Income Escaping Assessment Sec. 147 & 148A, Faceless Assessment of income escaping assessment Sec. 151A	05
UNIT-VII	Tax Deduction at Source Advance Tax, Interest Payable Deduction of Taxes at Source Sec: 192 Sec: 194A Sec: 194C Sec: 194H Sec: 194I Sec: 194J Advance Tax U/S 207, 208, 209, 210 & 211 Interest Payable U/S 234A, 234B, 234C	10
UNIT-VIII	DTAA U/S 90 & 91	05
UNIT- IX	Tax Planning & Ethics in Taxation Basic Concepts	05
	Total	60

LEARNER'S SPACE:

1. Self-computation of Income.
2. Applications of income tax law.
3. Certificate course on e-filing of income tax returns

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

1. Filing of returns
2. Computation of tax liability
3. Types of assessments

RECOMMENDED REFERENCES BOOKS:

1. Direct Taxes Law & Practice by V.K. Singhania – Taxman
2. Systematic Approach to Direct Tax by Ahuja & Gupta - Bharat Law House
3. Income Tax Ready Reckoner by Dr.V.K. Singhania – Taxman
4. Direct Tax Laws by T.N. Manoharan - Snow White

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/user/1dilipbadlani>
2. <https://www.youtube.com/c/ChandanPoddar/videos>
3. <https://www.youtube.com/c/NitinGoel/videos>

LIST OF MOOC PROGRAMS:

1. Direct taxation in India a comprehensive study – Udemy
2. Advanced course on income tax assessment and appeal – ICAI
3. Direct tax - laws and practice - Swayam

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Practical Question OR Q.2 Full-length Practical Question	15
Q.3	Q.3 Full-length Practical Question OR Q.3 Full-length Practical Question	15
Q.4	Q. 4 Full-length Practical Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

INFORMATION TECHNOLOGY IN ACCOUNTANCY – II

Course Code: PUCAFIV22 - 454

MODULES AT GLANCE:

Sr No	Modules	No of lectures	Credit Points
1.	Business Process	15	03
2.	Computerized accounting system	20	
3.	Concept of MIS Reports in Computer Environment	10	
4.	IT and Auditing	15	
	Total	60	

OBJECTIVES:

- To study business process management.
- To study automation of the business process.
- To study computerised accounting system software like TALLY ERP
- To study Management Information System which helps organizations like HR, Marketing, and Finance etc.
- To study internal audits to evaluate the effectiveness of an operation's internal control

LEARNING OUTCOMES:

- Learner will be able to understand the need & importance of business process, business process management in IT, BPM life cycle
- Learner will get hands on practical knowledge of tally software
- Learn importance & applications of information system in management, the role of computer in MIS.
- Learn different IT auditing techniques

SYLLABUS

UNIT NO	Modules/Units	Lectures
UNIT-I	Business Process Introduction, Definition and Meaning of business process Flow of business process for accounting, purchase, sales and finance Classification of business processes Introduction, Definition and Meaning of Business Process Management, Principles and practices of Business Process Management, Business Process Management life cycle Theories of Business Management Process, Implementation of Business process Management – need, key factors and importance Automation of business Processes – benefits, risks, challenges Accounting systems automation IT and Business Process Management Information systems – Meaning, Use of IT in accountancy	15
UNIT-II	Computerized accounting system Introduction and meaning Uses and Benefits Role Need and requirements of computerized accounting Basic requirements of computerized accounting system Limitations of computerized accounting system Understand the development and design of a computerized accounting system; determining how the accounting data will be processed, i.e., what accounts and books are needed and what is the desired output i.e., financial reports and other reports. Accounting Software Introduction and meaning Advantages of accounting software Uses of Accounting software Various accounting software's accounting software TALLY – Accounting and reports	20
UNIT-III	Concept of MIS Reports in Computer Environment Introduction Concept of MIS Need for MIS Characteristic of MIS Outputs of MIS Role of MIS Guidelines for Developing MIS reports Functional Aspects of the MIS: Problems in MIS Knowledge required for studying MIS and Computer	10
UNIT- IV	IT and Auditing	15

	Need and importance of IT in Auditing in IT environment Microsoft Outlook	
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LEARNER SPACE:

1. Encouraging students to learn free certification course from Udemy and IBM.
2. Suggesting students to read news about current Technology.
3. Students are asked to prepare ppt and present the information they have collected through various sources.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

- Microsoft Outlook
- TALLY – Accounting and reports

RECOMMENDED REFERENCES BOOKS:

1. Fundamentals of Computers – Rajaram V – Prentice Hall, Hill Joseph,
2. Computer today (3rd edition) – Sanders, Donald H – McGraw Hill
3. Computers and Common sense – Hunt, Roger and Shelly John – Prentice Hall
4. Computers – Subramaniam N – Wheeler
5. Introduction to Computers – Xavier C. – New Age
6. Computer in Business – Sanders D – McGraw Hill
7. Computers and Information Management – S C Bhatnagar & V Ramant – Prentice Hall

RECOMMENDED ICT BACKUP: -

1. <http://media.news.health.ufl.edu/misc/training/Handouts/Outlook/2016/Outlook2016-Beginners.pdf>
2. https://www.tutorialspoint.com/management_information_system/basic_information_concepts.htm
3. <https://www.careersinaudit.com/article/the-importance-of-it-audit-in-an-organisation/>

LIST OF MOOC PROGRAMS:

1. Excel for Data Management - edX
2. Digital Marketing Strategy - edX
3. Basic Network and Database Security - edX

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Theory Question OR Q.2 Full-length Theory Question	15
Q.3	Q.3 Full-length Theory Question OR Q.3 Full-length Theory Question	15
Q.4	Q. 4 Full-length Theory Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

FOUNDATION COURSE IN MANAGEMENT - IV
(INTRODUCTION TO MANAGEMENT)
Course Code: PUCAFIV22 - 455

MODULES AT GLANCE:

Sr No	Modules	No of lectures	Credit Point
1.	Introduction to Basic Management Concepts	05	02
2.	Functions of Management – Planning and Organizing	15	
3.	Functions of Management – Staffing, Directing and Controlling	15	
4.	Conflicts, Negotiation and Stress Management	10	
	Total	45	

OBJECTIVES:

- To understand planning, decision making, organising and various other concepts like centralisation & decentralisation, departmentation and delegation.
- To understand staffing, directing, coordination and controlling.
- To understand organisational conflicts, negotiation and stress management.
- To understand the concepts of leadership and motivation.

LEARNING OUTCOMES:

1. Students may understand the importance of planning and why organizations need to plan and control.
2. Its helps to the students to develop cognizance of the importance of management function and stress and conflict management.
3. Demonstrate the roles, skills and functions of management.
4. This course covers the explanations about the fundamentals of management discipline in organizational context. It details the different functions of management such as planning, organizing, staffing, directing, and controlling.

SYLLABUS

	Modules/Units	Lectures
UNIT-I	Introduction to Basic Management Concepts: Definition of Management, Nature of Management, Objectives of Management, Administration vs Management,	05
UNIT-II	Functions of Management – Planning and Organising Planning: Definition and Importance of Planning, Process of Planning, Limitations of Planning, Features of Sound Planning, Features and process of decision making Organising: Definition, Nature and significance, Process of organisation, Principles of organisation, Formal and Informal organisation - features, advantages and disadvantages, Centralisation and decentralisation – factors, merits and demerits, Departmentation and Delegation	15
UNIT-III	Functions of Management – Staffing, Directing and Controlling Staffing: Meaning, Importance of Staffing, Recruitment and its sources, Selection procedure, Distinction between Recruitment and Selection, Employment tests, Directing and Controlling: Meaning and Importance of directing, Principles of Directing, Leadership traits and Styles, Motivation – Importance and Factors, Co-ordination – Meaning, features and Importance, Meaning and steps in controlling, Essentials of a good control system.	15
UNIT-IV	Conflicts, Negotiation and Stress Management Meaning of stress, types of stress and stressors, Sources of Organizational Conflicts, Conflict resolution strategies, Stress Management	10

LEARNER SPACE:

Students with good performance in academics can be explained the various aspects of human resource management. Further they can be asked to give a visit to any organisation of their choice and to know about the HR policy of the company which will ensure that they understand the subject practically along with theoretical lectures.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

- Management consulting
- Stress management counseling

RECOMMENDED REFERENCES BOOKS:

1. Why Zebras Don't Get Ulcers - Robert Sapolsky
2. Rewire your mind – Steven Schuster
3. Management: Tasks, Responsibilities and Practices - Peter. F. Drucker

RECOMMENDED ICT BACKUP: -

1. Management Principles VS Pure science Principles -
<https://www.youtube.com/watch?v=tZjmYXQIsLk>
2. Principles of management by Henry Fayol -
<https://www.youtube.com/watch?v=A4Qx9ioo4DQ>
3. Stress Management Strategies – Vivek Bindra
<https://www.youtube.com/watch?v=B7T5rITvMJY>

LIST OF MOOC PROGRAMS:

1. Leading The Organization – University Of Queensland (Edx)
2. Conflict Resolution – SBI (Edx)

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Theory Question OR Q.2 Full-length Theory Question	15
Q.3	Q.3 Full-length Theory Question OR Q.3 Full-length Theory Question	15
Q.4	Q. 4 Full-length Theory Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

BUSINESS LAW (COMPANY LAW – III)

Course Code: PUCAFIV22 - 456

MODULES AT GLANCE:

Sr No	Modules	No of lectures	Credit Points
1.	Unit-1 - Definitions - Section 2	05	03
2.	Unit – 2 - Incorporation of company	15	
3.	Unit – 3 - Public Offer & Private Placement	10	
4.	Unit – 4 - Share Capital and Debentures	15	
5.	Unit – 5 NIDHI Rule, 2014 Rule 1 to Rule 24	15	
	Total	60	

OBJECTIVES:

- To learn about new provisions covered under the companies act, 2013
- To understand the process of incorporation of a company.
- To know about the various sources of funds used by the companies.
- To understand the Investors rights.

LEARNING OUTCOMES:

They are realizing about the legal provisions to support new businessman.

SYLLABUS

UNIT NO	Modules/Units	Lectures
UNIT-I	Unit-1 - Definitions - Section 2 Clause (2) - Accounting Standard Clause (7) - Auditing Standard Clause (13) - Books of Accounts Clause (30) – Debenture Clause (36) – Document Clause (37) – Employees Stock option Clause (46) – Holding Company Clause (52) – Listed Company Clause (71) – Public Company Clause (62) - One Person Company Clause (85) - Small Company Clause (88) – Subsidiary Company	05
UNIT-II	Unit – 2 - Incorporation of company Section 3 to Section 20	15
UNIT-III	Unit – 3 - Public Offer & Private Placement Sections 23, 25 to 28, 33, 35, 39	10
UNIT- IV	Unit – 4 - Share Capital and Debentures Sections 43, 47, 52 to 56, 61 to 72	15
UNIT- V	Unit – 5 Section 406 – Power to modify Act in its application to Nidhis NIDHI Rule, 2014 _Rule 1 to Rule 24	15

LEARNER SPACE:

1. Candidate can get practical experience about loan process.
2. Get knowledge about SME Loan providers system.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

- Jobs in NBFC
- Finance Advisor
- Financial Institutions -Legal Departments

RECOMMENDED REFERENCES BOOKS:

1. Company Act 2013 by Taxman
2. Company Act 2013 by Ravi Puliani, Bharat Publication
3. Business Law (Company Law-III) – Manan Prakashan

RECOMMENDED ICT BACKUP: -

1. <https://www.youtube.com/watch?v=K4JeBxLIkUQ> - Full Company Act 2013
2. <https://www.youtube.com/watch?v=G9MyWFgsNLU> - Nature of Company – Introduction to Companies Act 2013
3. <https://www.youtube.com/watch?v=xlCh2J4hpIk> - NIDHI Rule 2020

LIST OF MOOC PROGRAMS:

Corporate Law - Swayam

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Theory Question OR Q.2 Full-length Theory Question	15
Q.3	Q.3 Full-length Theory Question OR Q.3 Full-length Theory Question	15
Q.4	Q. 4 Full-length Theory Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20

RESEARCH METHODOLOGY IN ACCOUNTING & FINANCE

Course Code: PUCAFIV22 - 457

MODULES AT GLANCE:

Sr. No.	Modules	Lectures	Credit points
1.	Introduction to Research	15	03
2.	Research design in Accounting & Finance	15	
3.	Data Collection & Processing	15	
4.	Interpretation & Report writing	15	
	Total	60	

OBJECTIVES:

- To develop better insights.
- To develop a systematic structure for the research project.
- To enhance the research quality by learning statistical tools.

LEARNING OUTCOMES:

1. Include areas of study with research outcomes
2. Learning effectiveness.
3. Enhancing the skills of the students.

SYLLABUS

Unit no	Modules/Units	Lectures
UNIT-I	Introduction to Research. Introduction & meaning of research, Objectives of research, Features & Importance of research in Accounting & Finance, Objectives & Types of research – Basic, Applied, Descriptive, Analytical & Empirical research., Formulation of a research problem – Meaning & Selection., Formulating & Stating the problem, Review of Literature. Introduction to Research Ethics – Concept of Plagiarism. Practical Application: Selecting a certain topic for research framing a ROL and drafting an introduction of their selected topic	15
UNIT-II	Research design in Accounting & Finance. Introduction, Meaning, Need & Good research design, Need of Research Design, Qualities of a good research design, Hypothesis – formulation, Sources, Importance, Types, Different research designs. Practical Application: Deciding a research methodology and the sample size. Frame the Questionnaire and creation of google form for the selected sample area.	15
UNIT-III	Data Collection & Processing. Data Collection- Introduction, meaning, Types of Data; Primary Data – Observation, Experimentation, Interview, Schedules, Survey, Questionnaires, Limitations; Secondary Data – Sources & Limitations; Factors affecting the choice of method of data collection; Sampling, Significance, Methods, Factors determining sample size; Data Presentation – Significance, Stages in data processing, Editing, coding, Classification, Tabulation, Graphic Presentation; Statistical Analysis – Tools & techniques, Measures of Central Tendency, Measures of Dispersion, correlation Analysis & Regression Analysis; Use of Computer & internet in data collection & Processing. Practical Application: Practical sums based on Arithmetic Mean, Median, Mode by using Microsoft Excel.	15
UNIT- IV	Interpretation & Report writing. Meaning & Technique of Interpretation, Research Report Writing – Importance Essentials, Structure/ Layout.	15

LEARNER SPACE:

- Students can indulge in research activities by writing research papers on specific topics through framing ROL, Questionnaires, etc.
- Students can learn the calculation of Arithmetic Mean, Median & Mode through Microsoft Excel.

JOB ORIENTED SKILL DEVELOPMENT TOPICS:

1. Data Analysis & Interpretation.

RECOMMENDED REFERENCES BOOKS:

1. Research Methods in Accounting, Malcolm Smith
2. Research Methods and Methodology in Finance and Accounting, by Viv Beattie and Bob Ryan.

RECOMMENDED ICT BACKUP: -

1. Microsoft Excel for Practical Problems based on Arithmetic Mean, Median, Mode.
2. <https://www.youtube.com/watch?v=sSPlvtp-zbk>

LIST OF MOOC PROGRAMS:

Research Methodology - SWAYAM

EVALUATION SCHEME

EXAMINATION PATTERN

External Exam: 60 Marks

Internal Exam: 40 Marks

External Exam Paper Pattern:

Total Marks: 60

Duration: 2 hours

Question No.	Particulars	Marks
Q.1	Q.1 Objective Questions* (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) (1 Mark Each) All Modules	15
Q.2	Q.2 Full-length Theory Question OR Q.2 Full-length Theory Question	15
Q.3	Q.3 Full-length Theory Question OR Q.3 Full-length Theory Question	15
Q.4	Q. 4 Full-length Theory Question OR Q. 4 Short notes (any 3 out of 5)	15

Note: Full-length questions of 15 marks each can be subdivided into two sub-questions of '08' & '07' marks each

Internal Exam Pattern: 40 Marks

Sr.no	Particulars	Marks
1	Class Test (Theory & Practical Sums) Objective Questions (*Multiple Choice/ True or False/ Match the Columns/ Fill in the Blanks) Answer in One Sentence (Concept-based Questions) Answer in Brief	20
2	Assignments Live Projects, Open Book Tests, Home Assignments, Presentations, Survey, Seminars & Workshops	20



**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND
COMMERCE, (AUTONOMOUS) DOMBIVLI (EAST), DIST. THANE
(Affiliated to University of Mumbai)**

Faculty of Science

DEPARTMENT OF BIOTECHNOLOGY

(Programme: Bachelor of Science, B.Sc.)

SYLLABUS FOR

S. Y. B.Sc. – Biotechnology (Semester III and IV)

Choice Based Credit System (CBCS)

(With effect from the Academic Year: 2022-2023)

SEMESTER- III				
Course code	Course type	Course Title	Credits	Lectures/ Week
PUSBTIII22-371	Core Subject	Biophysics	2	3
PUSBTIII22-372	Core subject	Applied Chemistry- I	2	3
PUSBTIII22-373	Core Subject	Immunology	2	3
PUSBTIII22-374	Core Subject	Cell Biology and Cytogenetics	2	3
PUSBTIII22-375	Core Subject	Molecular Biology	2	3
PUSBTIII22-376	Skill enhancement elective	Bioprocess Technology	2	3
PUSBTIII22-377	General Elective	Entrepreneurship development	2	3
PUSBTIII22-P1	Core subject Practical	Practical of PUSBTIII22-371 and PUSBTIII22-372	2	6
PUSBTIII22-P2	Core subject Practical	Practical of PUSBTIII22-373 and PUSBTIII22-374	2	6
PUSBTIII22-P3	Core Subject and Skill enhancement elective Practical	Practical of PUSBTIII22-375 and PUSBTIII22-376	2	6
SEMESTER-IV				
Course code	Course type	Course Title	Credits	Lectures/ Week
PUSBTIV22-471	Core Subject	Biochemistry	2	3
PUSBTIV22-472	Core subject	Applied Chemistry- II	2	3
PUSBTIV22-473	Core Subject	Medical Microbiology	2	3
PUSBTIV22-474	Skill enhancement	Molecular Diagnostics	2	3

	elective			
PUSBTIV22-475	Core Subject	Biostatistics and Bioinformatics	2	3
PUSBTIV22-476	Core Subject	Environmental Biotechnology	2	3
PUSBTIV22-477	General Elective	Research methodology	2	3
PUSBTIV22-P1	Core subject Practical	Practical of PUSBTIV22-471 and PUSBTIV22-472	2	6
PUSBTIV22-P2	Core Subject and Skill enhancement elective Practical	Practical of PUSBTIV22-473 and PUSBTIV22-474	2	6
PUSBTIV22-P3	Core subject Practical	Practical of PUSBTIV22-475 and PUSBTIV22-476	2	6

SEMESTER III

Course Code	Title	Credits	No. of Lectures
PUSBTHI22-371	BIOPHYSICS	2	
<p>Course objectives:- The objective of this course is to have a firm foundation in the fundamentals and applications of current biophysical theories.</p> <p>Learning outcomes:-By the end of the course the student will:</p> <ul style="list-style-type: none"> • Develop an understanding of the different aspects of classical physics. • Be able to relate principles of physics to applications and techniques in the field of biology such as microscopy, spectroscopy and electrophoresis. 			
UNIT I Optics and Electromagnetic Radiations	Introduction to Optics and Lasers: <i>Optics:</i> Properties of Light - Reflection, Refraction, Dispersion, Interference. <i>Lasers:</i> Properties of Lasers, Stimulated Emissions, Laser Action; Applications of Laser. Electromagnetic Radiations: Introduction to Electromagnetic Radiation. Spectroscopy: Types and Properties of Spectra; Basic Laws of Light Absorption. Spectrophotometer:-Principle, Instrumentation and Applications; UV-Vis Spectrophotometer, Single and Dual Beam Spectrophotometer. Microscopy: Types of Microscopy; Electron Optics; Electron Microscopy- Preparation of Specimen, SEM, TEM and Immuno-Electron Microscopy. Fluorescence Microscopy.		15

<p>UNIT II Heat, Sound, Magnetism and Fluid Dynamics</p>	<p>Heat: Concept of Temperature; Modes of Heat Transfer; Measuring Temperature; Platinum Resistance Thermometer; Thermocouple and Thermistors.</p> <p>Sound: Types of Sound Waves - Audible, Ultrasonic and Infrasonic Waves; Doppler Effect; Applications of Ultrasonic Waves.</p> <p>Magnetism: Magnetic Field; Magnetism of Earth; Paramagnetism, Diamagnetism, Ferromagnetism.</p> <p>Nuclear Magnetism and Biomagnetism.</p> <p>Fluid Dynamics : Viscosity: Definition Flow of Liquids through Capillaries; Stokes' Law; Terminal Velocity. Determination of 'η' by Falling Sphere Method; Viscosity Estimation by Oswald's Viscometer.</p> <p>Surface Tension: Definition - Surface Tension and Surface Energy; Capillary Action; Angle of Contact; Wettability; Temperature Dependence of Surface Tension. Applications in Biology.</p>		15
<p>UNIT III Electrophoretic Techniques</p>	<p>Electrophoresis: Introduction, Principle of Electrophoresis Migration of Ions in an applied electric field; Factors affecting Electrophoretic Mobility;</p> <p>Types & Techniques of electrophoresis: Free Electrophoresis: Moving Boundary Electrophoresis;</p> <p>Zone Electrophoresis : Supporting Matrix Paper electrophoresis; AGE; Native and SDS PAGE (reducing and non-reducing, continuous and discontinuous);</p> <p>Specialized Electrophoretic techniques: Discontinuous Gel Electrophoresis, Isoelectric focusing and 2D PAGE. Staining and Detection methods; Gel-Documentation. Applications in Biology.</p>		15

Learner's space:

Applications of Optics in Medical field/Space Science, etc. Use of Electrophoresis in Advance Molecular Biological techniques like PCR/RAPD/RFLP/AFLP etc.

MOOC:

1. <https://www.classcentral.com/course/swayam-fundamentals-of-optical-and-scanning-electron-microscopy-5334>
2. <https://www.classcentral.com/course/swayam-experimental-biotechnology-19863>

Pedagogy: Group discussion, Models, Animated YouTube Videos, Online worksheets, Virtual Labs.

Reference books:

1. Essential Biophysics, Narayanan, New Age Publications
2. Handbook of Molecular Biophysics (Methods & Application), 2009, HG Bohr, Wiley
3. Biophysical Chemistry: Principles & Techniques by Upadhyay, Upadhyay, Nath. (Himalaya Publishing House)
4. Principles and Techniques of Biochemistry and Molecular Biology, Keith Wilson and John Walker, Cambridge University Press
5. Fundamentals of Optics, H.R. Gulati and D.R. Khanna, 1991, R. Chand Publications

ICT backup:

1. <https://www.britannica.com/technology/laser>
2. https://www.va.gov/DIAGNOSTICEM/What_Is_Electron_Microscopy_and_How_Does_It_Work.asp
3. http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S000002BI/P001354/M021523/ET/1501757741ET.pdf
4. <http://www.dspmuranchi.ac.in/pdf/Blog/electrophoresis.pdf>
5. <https://ncert.nic.in/ncerts/l/iesc112.pdf>
6. <https://ncert.nic.in/textbook/pdf/leph105.pdf>

Course Code	Title	Credits	No. of Lectures
PUSBTHI22-372	APPLIED CHEMISTRY – I	2	
Course objectives:- The objective of this course is to have a firm foundation in the fundamentals and applications of organic and green chemistry. Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • Develop an understanding of the different aspects of organic and green chemistry. • Discuss the role of organic compounds in biology and synthesis of organic compounds. • Discuss the role of green chemistry and its application in industry. 			
UNIT I Organic Chemistry	Introduction to Types of Organic Reactions: Addition, Elimination and Substitution Reactions. Rearrangement reactions Metal Coordination in Biological Systems: Essential and Non-essential Elements in Biological Systems. Role of Metal Ions in Biological Systems Enzymes, Apoenzymes and Coenzymes. Biological Role of Metalloenzymes with respect to Myoglobin, Haemoglobin. Biological Role of Carboxypeptidases, Catalases and Peroxidases. Structure and Function: Dioxygen Binding, Transfer and Utilization; Metal Complexes in Medicines.		15
UNIT II Synthesis of Organic Compounds	Synthesis of Organic Compounds : Criteria for Ideal Synthesis; Selectivity and Yield. Linear and Convergent Synthesis and Multicomponent Reactions. Microwave Assisted Organic Synthesis, Ultrasound in Synthesis and Polymer supported Synthesis. Retrosynthesis.		15

UNIT III Green Chemistry and Synthesis	Introduction to Green Chemistry; Need and Relevance of Green Chemistry; Goals of Green Chemistry. Limitations/Obstacles in the pursuit of the goals of Green Chemistry. Principles of Green Chemistry. Green Synthesis in Industry: Green Materials, Green Reagents, Green Solvents and Green Catalysts. Future Trends in Green Chemistry: Green chemistry in sustainable development.		15
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Learner's space:

Biological role of different enzymes, isoenzymes and coenzymes, organic synthesis of active pharmaceutical compounds and the significance of green chemistry for sustainable development can be studied.

MOOC:

Enzymology - https://onlinecourses.swayam2.ac.in/cec20_bt20/preview Swayam, Credit point - 4, Duration - 12 weeks, UG level

Pedagogy: Animated Videos, Group discussion, Models, Google classrooms.

Reference books:

1. Organic Chemistry, R.T. Morrison, R.N. Boyd and S.K. Bhattacharjee, 7th Edition, Pearson Education (2011).
2. Organic Chemistry, T.W.G. Solomon and C.B. Fryhle, 9th Edition, John Wiley & Sons, (2008)
3. A guide to mechanism in Organic Chemistry, 6th Edition, Peter Sykes, Pearson Education
4. Fundamentals of Organic Chemistry, G. Marc Loudon, 4th Edition Oxford
5. Biochemistry - Satyanarayan and Chakrapani 4th edition
6. Lehninger, Principles of Biochemistry. 5th Edition (2008), David Nelson & Michael Cox, W.H. Freeman and company, NY.
7. V.K. Ahluwalia & M.R. Kidwai: New Trends in Green Chemistry, Anamalaya Publishers (2005).
8. M.C. Cann & M.E. Connely: Real-World cases in Green Chemistry, American Chemical Society, Washington (2000).

ICT backup:

1. https://www.rgpv.ac.in/campus/PY/enzymes_ppt.pdf
2. <https://www.vedantu.com/chemistry/types-of-organic-reactions>
3. <https://www2.chemistry.msu.edu/faculty/reusch/virttxtjml/synth2.htm>
4. <https://www.iqvia.com/blogs/2019/11/importance-and-impact-of-organic-synthesis-and-retrosynthesis-in-the-field-of-chemistry>
5. <https://www.epa.gov/greenchemistry/basics-green-chemistry>

Course Code	Title	Credits	No. of lectures
PUSBTIII22-373	IMMUNOLOGY	2	
Course objectives:- The objective of this course is to familiarize students with the immune effector mechanisms and various immunotechniques.			
Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • Understand the role of complements in immune response and different immune cell receptors involved in immune reaction. • Understand the principles underlying various immunotechniques. 			
UNIT I Effectors of Immune Response	Complement System- Classical, Alternate and Lectin pathways; Regulation and Biological Effects of Complement System; Deficiencies of Complement System MHC Classes - General Organization and Inheritance; Structures and Peptide Interactions; Class I and II Diversity and Polymorphism; Antigen Presentation through Endocytic and Exocytic Pathways; MHC Restriction.		15
UNIT II Cell Receptors	T-cell Receptor Complex: Structure and Activation. B-cell Receptor: Structure, Maturation and Activation Toll like receptors B-T cell interaction (B-T cell cooperation) Cell cytotoxic responses as the effector mechanism.		15
UNIT III Immuno Techniques	Precipitation Reactions : Immunoprecipitation, Immunoelectrophoresis, CIEP, Rocket Electrophoresis and 2-D Immunoelectrophoresis Agglutination Reactions : Passive, Reverse Passive, Agglutination Inhibition. Coomb's Test; Complement Fixation Tests, RIA, ELISA, ELISPOT,		15

	Chemiluminescence, Western Blot, Immunofluorescence, Flow Cytometry. Alternatives to Antigen-Antibody Reactions.		
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Learner's space:

Application of immunology concepts and techniques in commercial kits used to diagnose the infections.

MOOC:

1. Fundamentals of Immunology: Innate Immunity and B-Cell Function
<https://www.coursera.org/learn/immunologyfundamentalsimmunitybcells?specialization=immunology>, Coursera, Duration - 12 weeks, UG level
2. Immunology - Course (swayam2.ac.in) Swayam, Credit point – 4, Duration - 12 weeks, UG level.

Pedagogy: YouTube videos, PPT, Group discussion, Models, Practical techniques, Animated videos, Virtual labs.

Reference books:

1. Immunology, Richard Goldsby, Thomas Kindt, Barbara Osborne, JenisKuby; 5th edition.
2. Textbook of basic and clinical immunology, 1st edition (2013), Sudha Gangal and ShubhangiSontakke, University Press, India
3. Immunology, 7th edition (2006), David Male, Jonathan Brostoff, David Roth, Ivan Roitt, Mosby, USA.
4. Introduction to Immunology- C V Rao- Narosa Publishing House

ICT backup:

1. https://www.physio-pedia.com/Complement_System
2. <https://courses.lumenlearning.com/microbiology/chapter/major-histocompatibility-complexes-and-antigen-presenting-cells/>
3. <https://youtu.be/3W67OH3v2IU>
4. <https://youtu.be/RRbuz3VQ100>

Course Code	Title	Credits	No. of lectures
PUSBTIII22-374	CELL BIOLOGY AND CYTOGENETICS	2	
<p>Course objectives:- The objective of this course is to have a firm foundation in the fundamentals of cell biology and cytogenetics.</p> <p>Learning outcomes:- By the end of the course the student will be able to:</p> <ul style="list-style-type: none"> • Develop an understanding of the cytoskeleton and transport mechanism across cell membranes. • Discuss the structure of chromosomes and types of chromosomal aberrations, linkage and mapping. 			
UNIT I Cytoskeleton	<p>Overview of the Major Functions of Cytoskeleton.</p> <p>Microtubules: Structure and Composition, MAPs, Functions of Microtubules.</p> <p>Motor Proteins: Kinesin, Dynein</p> <p>MTOCs, Dynamic Properties of Microtubules</p> <p>Microtubules in Cilia and Flagella</p> <p>Intermediate Filaments:</p> <p>Structure and Composition</p> <p>Assembly and Disassembly</p> <p>Types and Functions</p> <p>Microfilaments: Structure and Composition, Assembly and Disassembly</p> <p>Motor Protein: Myosin</p> <p>Role of Microfilaments in Muscle</p> <p>Contractility</p> <p>Actin Binding Proteins</p> <p>Examples of Nonmuscle Motility and Contractility</p>		15

UNIT II Cellular Transport and Cellular Interactions	Concept of Cell Permeability Uptake of Nutrients by cells Principles of Membrane Transport- Transporters and Channels Active Transport, Passive Transport Types of Transporters: ATP Driven Pumps - Na ⁺ K ⁺ Pump, Ca ²⁺ pump Cell Junctions and its Classification, Microvilli Cell Adhesion: Role of cadherins and integrins Extracellular Matrix Cell Coat and Cell Recognition. Cellular Interactions.		15
UNIT III Cytogenetics	Genome organization in Viruses, Prokaryotes and Eukaryotes Extrachromosomal Inheritance Mitochondrial DNA, Chloroplast DNA Kappa particles in Paramecium Structural organization and Significance of Polytene chromosome, Lampbrush Chromosome Variation in Chromosomal Structure and Number : Deletion, Duplication, Inversion, Translocation, Aneuploidy, Euploidy and Polyploidy and Syndromes- Klinefelter, Turner, Cri-du-Chat, Trisomy 21, Trisomy 18 and Trisomy 13. Karyotyping and its importance Genetic Linkage, Crossing Over and Chromosomal Mapping : Two-point Cross; Three point Cross Pedigree Analysis.		15

Learner's space:

Insight into Cytoskeletal Abnormalities, cellular processes like Endocytosis and Literature search of human genetic disorders through OMIM.

MOOC:

1. Essential Human Biology: Cells and Tissues: Duration: 5 weeks (2–3 hours per week)
Self-paced, Free (Optional upgrade available)<https://www.edx.org/course/essential-human-biology-cells-and-tissues>.
2. General Biology II: The World of the Cell<https://www.udemy.com/course/general-biology-ii-the-world-of-the-cell/>
3. <https://www.classcentral.com/course/swayam-human-molecular-genetics-5803>

Pedagogy: Posters, PowerPoint presentation, animated videos, Models, Case study (Genetic counselling), Preparing pedigree charts for inheritance of some human traits, Flipped classroom.

Reference books:

1. Cell and Molecular Biology- Concepts and Experiments, 6th edition (2010)—Gerald Karp – Wiley International
2. Molecular Biology of the Cell, 5th Edition (2007) Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter. Garland Science, USA
3. Cell and Molecular Biology – De Robertis- Lippincott Williams & Wilkins
4. Prescott, Harley and Klein's Microbiology, McGraw Hill Higher Education, Joanne M. Willey, Linda Sherwood, Lansing M. Prescott, Christopher J. Woolverton 7th edition 2008
5. Gardner, E.J., Simmons, M.J., Snustad, D.P. (2006). Principles of Genetics. VIII Edition John Wiley & Sons
6. Russell, P. J. (2009). Genetics- A Molecular Approach. III Edition. Benjamin Cummings
7. Griffiths, A.J.F., Wessler, S.R., Lewontin, R.C. and Carroll, S.B. IX Edition. Introduction to Genetic Analysis, W. H. Freeman & Co
8. Fundamentals of Genetics. B.D Singh
9. Textbook of Cell Biology, Genetics, molecular biology , Ecology and Evolution.: P.S. Verma and V.K Agarwal (2001)

ICT backup:

1. <https://www.cureffi.org/2013/03/30/cell-biology-07-microtubules-and-cell-division/>
2. <https://organismalbio.biosci.gatech.edu/chemical-and-electrical-signals/effectors-and-movement/>
3. http://www.vivo.colostate.edu/hbooks/pathphys/topics/sodium_pump.html
4. <https://www.khanacademy.org/science/ap-biology/cell-communication-and-cell-cycle/cell-communication/a/cell-cell-junctions>
5. <http://www2.csudh.edu/nsturm/CHEMXL153/GenomeOrganization.htm>
6. <https://www.lecturio.com/magazine/human-genetics-chromosomal-aberrations/>
7. <https://www2.kumc.edu/genetics/lab/>

Course Code	Title	Credits	No. of Lectures
PUSBTIII22-375	MOLECULAR BIOLOGY	2	
Course objectives:- The objective of this course is to have an insight into the mechanism of gene expression and regulation. Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> ● Examine the steps involved in the transcription of Prokaryotes & Eukaryotes. ● Discuss the mechanisms associated with gene expression at the level of translation. ● Discuss the mechanisms associated with regulation of gene expression in prokaryotes and eukaryotes. 			
UNIT I Gene Expression-Transcription	Gene Expression- an Overview. Transcription Process in Prokaryotes: RNA Synthesis; Promoters and Enhancers; Initiation of Transcription at Promoters; Elongation and Termination of an RNA Chain. Transcription in Eukaryotes: Eukaryotic RNA Polymerases; Eukaryotic Promoters; Transcription of Protein Coding Genes by RNA Polymerase; Eukaryotic mRNA's; Transcription of other genes; Spliceosomes, RNA editing		15
UNIT II Gene Expression-Translation	Nature of Genetic Code (Deciphering the genetic code, Characteristics, Wobble Hypothesis) Translation in Prokaryotes and Eukaryotes Charging of t-RNA, Process of Protein Synthesis (Initiation, Elongation, Translocation, Termination) Post Translational Modifications. Glycosylation, Acetylation, Methylation Protein sorting		15

UNIT III Regulation of Gene Expression	In Prokaryotes: In Bacteria: <i>lac</i> Operon of <i>E.coli</i> ; <i>trp</i> Operon of <i>E.coli</i> . In Eukaryotes : Operons in Eukaryotes; Control of Transcriptional Initiation; Gene Silencing and Genomic Imprinting; Post-Transcriptional Control; RNA Interference.		15
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Learner's space:

Role of Antibiotics in Bacterial Transcription & Translation Inhibition. Use of Gene Silencing in Therapeutics & its challenges.

MOOC:

1. <https://www.my-mooc.com/en/mooc/molecular-biology-part-2-transcription-mitx-7-28-2x-0/>
2. <https://www.edx.org/course/molecular-biology-part-3-rna-processing-and-transl?index=product&queryID=74a7f9fda239d84108dff3daf5d1e6cf&position=6>
3. <https://www.classcentral.com/course/epigenetics-486>.

Pedagogy: Google Classroom, YouTube animated Videos, Concept Mapping, Group Discussion, Worksheet & Flow Sheet Preparation & Power point presentation.

Reference books:-

1. iGenetics(Molecular Approach), 3rd edition- Peter Russell -Pearson Education
2. Microbial Genetics- Freifelder –Narosa Publishing House
3. Genes XI, 11th edition (2012), Benjamin Lewin, Publisher - Jones and Barlett
4. Nelson, D. L., Lehninger, A. L., & Cox, M. M. (2005). Lehninger principles of biochemistry 4thedn. Macmillan. W.H. Freeman and Company, New York.

ICT backup:

1. <https://www.youtube.com/watch?v=nXj2Hmd5114>
2. <https://www.youtube.com/watch?v=CxxQ5i97YB0>
3. <https://www.youtube.com/watch?v=G8RYhV569xg>
4. <https://www.khanacademy.org/science/biology/gene-regulation>

Course Code	Title	Credits	No. of Lectures
PUSBTIII22-376	BIOPROCESS TECHNOLOGY	2	
Course objectives:- The objective of this course is to understand the basic skills applied in fermentation technology and build a foundation for more advanced studies in bioprocess technology. Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • Develop an understanding of the various aspects of bioprocess technology. • Develop skills associated with screening of industrially important strains. • Understand principles underlying design of fermenter and fermentation process. 			
UNIT I Microorganisms in Industrial Processes	Types of Microorganisms used in Industrial Processes: Bacteria, Actinomycetes, Fungi and Algae. Screening and maintenance of strains: Primary Screening and Secondary Screening. Culture Collection centres. Strain improvement of microorganisms Preservation of Industrially Important Microbial Strains - Stab culture, Soil stock method, Lyophilisation & Cryopreservation		15
UNIT II Fermenter and Fermentation Processes	Design of a fermenter: Stirred Tank Fermenter- Basic Design; Parts of a Typical Industrial Fermenter. Fermentation Media: Components; Design and Optimization. Sterilization: Sterilization of Fermenter and Fermentation Media. Process Parameters: pH, Temperature, Aeration, Agitation, Foam, etc. Types of Fermentation: Surface and Submerged; Batch and Continuous, Aerobic and Anaerobic. Product Isolation and Purification. Study of representative fermentation processes: Outline of Penicillin and Ethanol Production by fermentation along with a flow-diagram.		15

UNIT III <i>In-vivo and In-vitro</i> Assay of Industrial Products	Assay of Industrial Products: <i>In vivo</i> Animal assays - Pyrogen and Endotoxin testing Chemical and Biological; Types and Subtypes; Kinetics. Advantages and Disadvantages. Bioavailability and Bioequivalence Studies		15
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Learner's space:

To explore manufacturing details of various industrial products produced by microorganisms.

MOOC:

1. Phase- I Online Certificate Course on Fermentation Technology - Atal Bihari Vajpayee Vishwavidyalaya (e-atalgiansangum.ac.in).
2. Microbial fermentation processes and bioreactor design - Biochemical and Bioprocess Engineering | Coursera

Pedagogy: Google classroom & making crossword puzzle & group discussions, Production flow-sheet preparation, Industrial visits.

Reference books:

1. Food Microbiology- Frazier
2. Industrial Microbiology- A. H. Patel
3. Industrial Microbiology- L. E. Casida- John Wiley & Sons
4. Prescott & Dunn's Industrial Microbiology by Prescott, Samuel cate 1872-1962, Fourth edition, Western cott publication.

ICT backup:

1. <https://youtu.be/xbdJUuHUXOE>
2. Screening of Microorganisms: Primary and Secondary Techniques | Industrial Biotechnology (biotechnologynotes.com)
3. https://youtu.be/hASoAZ_QCHk
4. Pharmaceutical Bioavailability and Bioequivalence: Pharmaceutical Guidelines (pharmaguideline.com)

Course Code	Title	Credits	No. of Lectures
PUSBTIII22-377	ENTREPRENEURSHIP DEVELOPMENT	2	
Course objectives:- To develop and systematically apply an entrepreneurial way of thinking that will allow identification and creation of business opportunities. Learning outcomes: - By the end of the course the student will be able to: <ul style="list-style-type: none"> • Develop an understanding of the systematic process and to select and screen a business idea. • Design strategies for successful implementation of ideas. • Learn potential opportunities and ideas and career choices available to the entrepreneur. 			
UNIT I Introduction to Entrepreneurship Development	Concept of Entrepreneur & Entrepreneurship; Need and Importance; Factors Influencing Entrepreneurship; Essentials of a Successful Entrepreneur. Ethics & Social Responsibility of Entrepreneurs, Opportunities & Scope of Entrepreneurs, Entrepreneurs in India & Abroad; Woman as an Entrepreneur.		15
UNIT II Setting-up of an Enterprise and Planning	Location of Enterprise; Real Estate and Human Resource Planning, Financial Planning; Role of Government and Financial Institutions in Entrepreneurship Development; Raising Money from Venture Capitalists, Government Grants, Product Selection and Ideas; Project Planning and Formulation; Project Feasibility Assessment; Regulatory Affairs, Corporate Laws, Innovation, IPR generation and Protection, Preparation of a Business Plan, Characteristics and Importance of Planning		15
UNIT III Marketing, Research and Opportunities in Biotechnology	Marketing Plan for an Entrepreneur; Strategic Alliances, Marketing strategy, Advertising and Sales Promotion Market Assessment and Market Research, Need for International Market Research, Domestic vs. International Market Research, Cost and Methodology of Market Research, Desk and Field Research Entrepreneurship Opportunities in Biotechnology		15

Learner's space:

Learn mentorship programs in collaboration with government organizations, incubation centres, educational institutions and private organizations.

MOOC:

1. https://www.startupindia.gov.in/content/dam/invest-india/Templates/public/Action__Plan.pdf
2. The Science and Business of Biotechnology: Duration: 16 weeks (10–12 hours per week), Self-paced, Free (Optional upgrade available)
3. <https://www.edx.org/course/the-science-and-business-of-biotechnology>

Pedagogy: YouTube videos, Case studies, Group Discussion, Seminars, Case studies, Flipped Classroom.

Reference books:

1. Entrepreneurship - Kurup
2. Handbook of Entrepreneurship development - Basotia and Sharma
3. Jose Paul and Kumar Ajith N, "Entrepreneurship Development and Management", Himalaya Publishers, New Delhi, 2000.
4. Dollinger, "Entrepreneurship Strategies and Resources", Pearson Education, 2003.
5. Holt David H, "Entrepreneurship: New Venture Creation", Prentice Hall of India, 2000

ICT backup:

1. <https://www.businessmanagementideas.com/entrepreneurship-2/women-entrepreneurs/21046>
2. https://youtu.be/ol_VZfjgkME
3. <https://youtu.be/YxfJPCXHAWA>
4. <https://www.labiotech.eu/expert-advice/beginners-guide-biotech-life-science-marketing/>
5. <https://www.process.st/business-plan-vs-business-proposal/>

PRACTICAL

SEMESTER III		
Course code	Title	Credits
PUSBTIII22-P1 (PRACTICAL based on PUSBTIII22-371 and PUSBTIII22- 372)	<ol style="list-style-type: none"> 1. Verification of Beer-Lambert's Law. 2. Study of Absorption Spectra of any one coloured compound (CuSO_4 / CoCl_2/ KMnO_4). 3. Plasmid Biology <ol style="list-style-type: none"> a) Extraction of Plasmid DNA and quantification using UV Spectrophotometry. b) Separation of plasmid DNA by Agarose Gel Electrophoresis. 4. Electrophoresis of Proteins by native PAGE and SDS-PAGE. 5. Electron Microscope, Fluorescence Microscope (Lab Visit). 6. Purification of any TWO Organic Compounds by Recrystallization Selecting Suitable Solvent. 7. Organic Estimations: Acetone, Amide, Benzoic Acid. 8. Organic Preparations: <ol style="list-style-type: none"> a) Acetylation of Primary Amine (Preparation of Acetanilide) 	2
Course code	Title	Credits
PUSBTIII22-P2 (PRACTICAL based on PUSBTIII22-373 and PUSBTIII22- 374)	<ol style="list-style-type: none"> 1. Passive Agglutination- RA Factor Test. 2. Immunoelectrophoresis 3. ELISA (Kit-based) - HEPALISA. 4. DOT-ELISA. 5. Western Blotting - Demonstration. 6. Flow Cytometry - Lab Visit. 7. Study of Human chromosomal disorders - Trisomy 21 Trisomy 13 Trisomy 18, Klinefelter and Turner, Cri-du-Chat.(Preferably using online software) 9. Study of Polytene Chromosomes. 10. Mapping based on Three Point Cross.(Problems) 11. Pedigree Analysis- Autosomal and Sex-Linked. (Problems) 12. Karyotyping: Video demonstration 	2

Course code	Title	Credits
PUSBTIII22-P3 (PRACTICAL based on PUSBTIII22-375 and PUSBTIII22- 376)	<ol style="list-style-type: none"> 1. Study of <i>E.coli</i> Diauxic Growth Curve- (Lactose and Glucose). 2. Study of <i>lac</i> Gene Expression using Blue-White Selection. 3. Expression of β-galactosidase and Measurement of Activity. 4. Screening for an Antibiotic Producing Strain of Microorganism. 5. Lab Scale Production of Penicillin (Static and shaker). 6. Purification of Penicillin from Broth Culture of <i>Penicillium spp.</i> by Solvent Extraction. 7. Estimation of Penicillin from Recovered Broth by Chemical (Iodometric) Method. 8. Estimation of Penicillin from Recovered Broth by Biological (Bioassay) Method. 	2

SEMESTER-IV

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-471	BIOCHEMISTRY	2	
Course objectives:- The objective of this course is to gain an insight into the metabolic processes associated with catabolism of carbohydrates, amino acids, lipids and nucleotides.			
Learning outcomes:- By the end of the course the student will be able to <ul style="list-style-type: none"> Understand the catabolic pathways of carbohydrates, amino acids, lipids and nucleotides. Explain the role of energy rich molecules in metabolism. 			
UNIT I Carbohydrate Metabolism, ETS and Energy Rich Compounds	Carbohydrate Metabolism: Glycolytic Pathway (Homolactic Fermentation; Alcoholic Fermentation) Citric Acid Cycle and its Regulation; Gluconeogenesis; Pentose Phosphate Pathway; Glyoxylate Pathway; Reductive TCA. (Sequence of Reactions, Regulation, Energy Yield and Metabolic Disorders of the above pathways) Electron Transport System: Electron Transport and Oxidative Phosphorylation, Inhibitors of ETS. Energy Rich Compounds: ATP as Energy Currency, Structure of ATP, Hydrolysis, Other Energy Rich Compounds other than ATP like PEP, Creatine Phosphate, etc.		15
UNIT II Amino Acid Metabolism	Protein digestion and absorption Overview of Amino acid biosynthesis Amino Acid Catabolism: Metabolic fate of amino groups: Transamination, Deamination, Fate of Ammonia, Urea Cycle Metabolic fate of carbon chain of amino acids: Breakdown of Glucogenic and Ketogenic Amino Acids. Amino Acids as Biosynthetic Precursors: Biosynthesis of Epinephrine, Dopamine, Serotonin, GABA, Histamine, Glutathione, Creatine, Indoleacetic acid and Cinnamate		15

UNIT III Lipid and Nucleotide Metabolism	Lipid Metabolism: Digestion, Mobilization & Transport of Fatty Acids. Beta oxidation of Saturated Fatty Acids; Oxidation of Unsaturated Fatty Acids; Oxidation of Odd Chain Fatty Acids. Alpha and Omega Oxidation of Fatty acids. Ketone Body synthesis and breakdown. (Sequence of Reactions, Regulation, Energy Yield and Metabolic Disorders of the above pathways) Nucleotide Metabolism: Degradation of Purines and Pyrimidines.		15
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Learner's space:

Anabolic pathways and Human genetic disorders affecting carbohydrates, amino acid, lipids and nucleotide metabolism can be studied.

MOOC: Biochemistry: The Molecules of Life, Duration: 3 weeks
<https://www.futurelearn.com/courses/biochemistry>.

Pedagogy: Flow-sheet preparation, metabolic pathway poster preparation, animated videos, Flipped classroom, Case study, Google classroom for E-notes.

Reference books:

1. Nelson, D. L., Lehninger, A. L., & Cox, M. M. (2005). Lehninger principles of biochemistry 4th edition. Macmillan. W.H. Freeman and Company, New York.
2. Biochemistry, 5th Edition by U Satyanarayana, U Chakrapani Elsevier Health Sciences, 25-Jun-2020
3. Fundamentals of Biochemistry. 3rd Edition (2008), Donald Voet & Judith Voet, John Wiley and Sons, I. USA
4. Biochemistry: 7th Edition, (2012), Jeremy Berg, Lubert Stryer, W.H. Freeman and company, NY

ICT backup:

1. <https://courses.lumenlearning.com/suny-ap2/chapter/carbohydrate-metabolism-no-content/>
2. <https://www.youtube.com/watch?v=ppqpUVaasNc>
3. <https://www.khanacademy.org/test-prep/mcat/biomolecules/fat-and-protein-metabolism/v/digestion-mobilization-and-transport-of-fats-part-i>
4. <https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/urea-cycle>
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6331359/>
6. <https://www.ncbi.nlm.nih.gov/books/NBK513323/>
7. <https://www.lecturio.com/magazine/metabolism-amino-acids/#transamination-of-amino-acids>

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-472	APPLIED CHEMISTRY –II	2	
Course objectives:- The objective of this course is to have a firm foundation in the fundamentals and applications of current chemical theories for the physical world. Learning outcomes:- By the end of the course the student will: <ul style="list-style-type: none"> • Develop an understanding of the different aspects of analytical chemistry. • Gain knowledge of natural product chemistry and related acquired skills. • Gain an understanding of basic concepts in polymer chemistry and Nanomaterials. 			
UNIT I Sampling and Separation Techniques	Sampling: Importance of Sampling and Sampling Techniques Types of Sampling - Random and Non-Random Sampling of Solids, Liquids and Gases. Separation Techniques: Types of Separation Techniques - Filtration, Zone refining, Distillation, Vacuum Distillation. Solvent Extraction - Partition Coefficient and Distribution Ratio, Extraction Efficiency, Separation Factor, Role of Complexing Agents, Chelation, Ion pair Formation, Solvation, and Soxhlation. Centrifugation - Basic principles of sedimentation.		15
UNIT II Natural Product Chemistry	Natural Product Chemistry: Primary and Secondary Metabolites. Distribution and biogenetic origin of natural products Natural products from Microorganisms and Fungi: Antibiotics, non-antibiotic drugs from fungal and other microbial sources, microbial phytotoxins Natural products from plants: Glycosides & Saponins, Alkaloids, Steroids & triterpenoids, Flavonoids, Coumarins & Lignans, Essential oils		15

	Chromatographic Separation of Natural Products: Separation Techniques: Planar chromatography: HPTLC Column chromatography: HPLC, GC		
UNIT III Polymers and Nanomaterials	Polymers: Introduction to Polymers. Types of Polymers - Monomer, Polymer, Homopolymer, Copolymer, Thermoplastics and Thermosets, Addition and Condensation Polymers (Examples and Uses) Stereochemistry of Polymers. Biodegradable Polymers. Nanomaterials: Introduction to Nanomaterials. Forms of Nanomaterials: Nanoparticles, Nanofilms and Nanotubes Synthesis and Characterization of Nanomaterials. Applications of Nanomaterials.		15

Learners' space:

Industrial applications of Sampling and Separation techniques, Structure elucidation of Natural products, Examples of nanomaterial products.

Pedagogy: PPTs, Preparation of charts, Video based lectures

References books:

1. Chemistry of Natural Products, O. P. Agarwal, Goel Publishing House
2. Trease and Evans Pharmacognosy, William C. Evans, 16th edition
3. Principles and Techniques of Biochemistry and Molecular Biology, Keith Wilson and John Walker, Cambridge University Press
4. Organic Chemistry, R.T. Morrison, R.N. Boyd and S.K. Bhattacharjee, 7th Edition, Pearson Education (2011).
5. Organic Chemistry, T.W.G. Solomon and C.B. Fryhle, 9th Edition, John Wiley & Sons, (2008)
6. A guide to mechanism in Organic Chemistry, 6th Edition, Peter Sykes, Pearson Education
7. Fundamentals of Organic Chemistry, G. Marc Loudon, 4th Edition Oxford
8. Organic Chemistry, L.G. Wade Jr and M.S. Singh, 6th Edition, 2008
7. Organic Chemistry, Paula Y. Bruice, Pearson Education, 2008
9. Vogel's Textbook of Quantitative Chemical Analysis, 6th Edition

10. Textbook of T.Y.B.Sc Analytical Chemistry Revised syllabus
11. Unit Operation of Chemical Engineering, 6th edition by Warren McCabe
12. S.Y.B.Sc Analytical Chemistry Textbook- Sheth Publishers
13. Basic Concepts of Analytical Chemistry-S.M. Khopkar
14. Bioanalytical Techniques, M.L. Srivastava
15. Polymers-Textbook of Organic Chemistry,T.Y.B.Sc Himalaya Publishing House
16. Polymer Science-V.R. Gowariker, Viswanathan
17. Nanomaterials: B. Viswanathan

ICT backup:

1. <https://www.researchgate.net/profile/Br-Rajeswara-Rao/post/What-is-the-most-efficient-method-for-extraction-of-phytochemicals-from-plants/attachment/59d6460ec49f478072eae357/AS%3A273831233556481%401442297861959/download/Natural+Products+Chemistry-Cooper%2C+Nicola.pdf>
2. <https://www.intechopen.com/books/secondary-metabolites-sources-and-applications/an-introductory-chapter-secondary-metabolites>
3. <https://www.frontiersin.org/articles/10.3389/fmicb.2019.00914/full>

Course Code	Title	Credits	No. of lectures
PUSBTIV22-473	MEDICAL MICROBIOLOGY	2	
Course objectives:- The objective of this course is to gain insight into disease factors and processes and diseases caused by microorganisms.			
Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • List the factors playing a role in causing a disease gain. • Discuss the various aspects of systemic infections including causative agents, symptoms and prophylaxis. • Gain the technical capability of handling, isolating and identifying various bacteria. 			
UNIT I Infectious Diseases	Host Parasite Relationship: Normal Flora; Factors Affecting the Course of Infection and Disease; Mechanisms of Infection and Virulence Factors. Infection: Patterns of Infection; Types of Infections; Signs and Symptoms; Epidemiology and Epidemiological Markers. Diseases: Origin of Pathogens; Vectors; Acquisition of Infection; Koch's Postulates.		15
UNIT II Medical microbiology- Causative Organisms- I	Skin: <i>S. aureus, S. pyogenes.</i> Respiratory Tract Infections: <i>M.tuberculosis, S.pneumoniae</i> (Characteristics Transmission, Course of Infection, Lab Diagnosis, Management of TB, Prevention and Control, Immuno and Chemoprophylaxis, DOTS and MDR). Urinary Tract Infections: <i>E.coli</i> : Characteristics, Virulence, Clinical disease, and <i>E.coli</i> Infections. <i>Proteus</i> .		15
UNIT III Medical microbiology - Causative Organisms- II	GI Tract Infections: <i>Salmonella and Shigella spp.</i> (Characteristics, Virulence- Pathogenesis and Immunity, Clinical Disease, Carriers Lab Diagnosis, Phage Typing Prophylaxis		15

	and Treatment).		
	Sexually Transmitted Diseases: Syphilis and Gonorrhoea.		
	Nosocomial Infections: <i>Pseudomonas aeruginosa</i>		
	Collection & processing of Clinical samples		

Learner's space:

To learn biochemical identification of other microorganisms of related infections using Bergey's Manual.

MOOC:

1. <https://www.coursera.org/learn/epidemics#about>
2. <https://www.lecturio.com/medical-courses/respiratory-tract-infections-introduction.lecture>
3. Bacteria and Chronic Infections | Coursera.

Pedagogy: Google classroom & making crossword puzzle & group discussions on examples, Practical techniques, PowerPoint presentation with pictures, E- journals, Virtual labs.

Reference Books:

1. Microbiology–6th Edition (2006), Pelczar M.J., Chan E.C.S., Krieg N.R., The McGraw Hill Companies Inc. N.Y Presscott's Microbiology, 8th edition (2010), Joanne M Willey, Joanne Willey, Linda
2. Sherwood, Linda M Sherwood, Christopher J Woolverton, Chris Woolverton, McGrawHil Science Engineering, USA.
3. Text book of Medical Microbiology, Anantnarayan 7th Edition
4. Microbiology- Frobisher, 9th Edition
5. Microbiology, an introduction by Gerard Tortora, Berdell Funke & Christine Case, 9th Edition 2008, Pearson Education.

ICT backup:

1. <https://www.mayoclinic.org/diseases-conditions/infectious-diseases/symptoms-causes/syc-20351173>
2. <https://www.healthline.com/health/klebsiella-oxytoca#symptoms>
3. <https://www.medicalnewstoday.com/articles/161858#medical-signs>
4. Lesson-10.pmd (nios.ac.in) Isolation & identification of Organisms
5. <https://youtu.be/3T7TpyCOpCo>
6. Bacterial Infections of the Respiratory Tract | Microbiology: Health and Disease (lumenlearning.com)

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-474	MOLECULAR DIAGNOSTICS	2	
<p>Course objectives:- The objective of this course is learning and understanding molecular techniques and utilizing these techniques in diagnosis.</p> <p>Learning outcomes:- By the end of the course the student will be able to:</p> <ul style="list-style-type: none"> ● Gain an understanding of the basic principles used in molecular diagnosis. ● Gain critical thinking and analytical skills to understand new diagnostic methods. ● Apply the knowledge and skills gained in the course to be able to use in developing new diagnostic kits. 			
UNIT I Basics of Molecular Diagnostics	<p>Introduction to Molecular Diagnostics: Overview of Molecular Diagnostics; History of Molecular Diagnostics; Molecular Diagnostics in post genomic era; Areas used in Molecular Diagnostics; Future prospects - Commercialising Molecular Diagnostics, personalized medicine, Theranostics.</p> <p>Characterisation and analysis of Nucleic acids and Proteins: Extraction, Isolation and Detection of DNA, RNA and Proteins; Restriction Endonucleases and restriction enzyme mapping, RFLP.</p> <p>Hybridisation techniques: Southern, Northern, Western and FISH; Markers, probes and its Clinical applications.</p>		15
UNIT II Nucleic acid amplification Method	<p>Target amplification: PCR - General Principle; Components of a Typical PCR reaction; Experimental Design; Primer Designing; Control of PCR Contamination and Mispriming; PCR Product Clean-up and Detection.</p> <p>PCR Types: Reverse Transcriptase PCR, Real Time PCR, Multiplex PCR, Nested PCR Applications of PCR</p>		15

UNIT III Molecular Biology based Diagnostics	Disease identification and Genetic tests for following disorders- Thalassemia, Sickle Cell anaemia, Alzheimer's disease. Molecular Diagnostics for infectious diseases: Molecular testing for <i>Neisseria</i> , Molecular diagnosis for HIV-1; Genetic Counselling and Molecular Diagnosis Genetic testing- Need and uses; genetic counselling. Case studies- Diagnostic testing for Cystic fibrosis; Fragile X diagnostic and Carrier testing. Ethical, Social and legal issues to molecular genetic testing		15
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Learner's space:

Collect information about molecular therapeutics. Applications of PCR other than medical field.

MOOC:

1. https://onlinecourses.nptel.ac.in/noc21_bt36/preview.
2. <https://www.mooc-list.com/tags/molecular-diagnosis>
3. <https://www.futurelearn.com/courses/molecular-techniques>

Pedagogy: Activity, Videos, Virtual labs.

Reference books:

1. Applications Genomics, Proteomics. Rastogi 3rd edition and Drug discovery
2. Molecular diagnostics- Fundamentals, methods and clinical applications – Buckingham and Flaws F.A. Davis Company Philadelphia.
3. Molecular diagnostics for the clinical laboratorian by Coleman and Tsongalis, Humana Press publication

ICT backup:

1. <https://www.khanacademy.org/science/ap-biology/gene-expression-and-regulation/biotechnology/a/polymerase-chain-reaction-pcr>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3768498/>
3. <https://academic.oup.com/femsre/article/43/1/88/5173038>
4. <https://www.aasv.org/jshap/issues/v7n3/v7n3p125.pdf>

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-475	BIOINFORMATICS and BIOSTATISTICS	2	
Course objectives:- The objective of this course is learning and understanding basic concepts of Bioinformatics and Biostatistics.			
Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> ● Gain an understanding of the basic concepts of Bioinformatics and Biostatistics. ● Understand the tools used in bioinformatics. ● Apply the various statistical tools for analysis of biological data. 			
UNIT I Introduction to Computers and Biological Databases	Computer Basics: Organization of a Computer; I/O Units; Computer Memory; Processor; Operating System. MS Word, Power point, Excel Internet Basics: Connecting to the Internet, E-mail, FTP, www, Difference between www and Internet. Biological Databases: Classification of Databases – General Introduction of Biological Databases; Nucleic acid databases (NCBI, DDBJ, and EMBL). Protein databases (Primary, Composite (KEGG), and Secondary (PIR). Structure databases (CATH & SCOP)		15
UNIT II Sequence Alignments & Visualization	Local alignment and Global alignment Pairwise alignment (BLAST and FASTA Algorithm) BLAST and Sequence Alignment: BLAST and its Types; Retrieving Sequence using BLAST. Multiple Sequence Alignment: Progressive Alignment Algorithm (ClustalW), Application of multiple sequence alignment. Protein Structure Visualization Software (RasMol). Phylogenetic analysis: Definition and description of phylogenetic trees, comparison		15

	of genetic sequences of organisms, Phylogenetic analysis tools.		
UNIT III Biostatistics	Theory and Problems based on- Coefficient of Correlation and Regression Analysis; Steps in Testing Statistical Hypothesis; Parametric Tests:- Z Test – Single Mean and Two Means, t- Test – Single Mean, Paired and Unpaired; Chi square Test.		15

Learner's space:

Use of bioinformatics tools in genomics and Proteomics. Application of Biostatistics in Pharmaceutical industry, Research & Development, Education & Commercial Industries.

MOOC:

1. <https://www.my-mooc.com/en/mooc/bioinformatics-introduction-and-methods-sheng-wu-xin-xi-xue-dao-lun-yu-fang-fa/>
2. <https://www.coursera.org/learn/bioinformatics-methods-1>
3. <https://www.coursera.org/learn/introduction-to-computers-and-office-productivity-software>.

Pedagogy: Google classroom, online bioinformatics software, YouTube videos, Online Worksheets.

Reference books:-

1. Bioinformatics- methods and Applications S.C.Rastogi, N. Mendiratta, Prentice Hall India Learning Private Limited
2. Introduction to Bioinformatics by Attwood & Parry-Smith
3. Biostatistics by Malhan & Arora
4. Biostatistics by B.K.Mahajan, 6th edition
5. Biostatistics by Veer Bala Rastogi

ICT backup:

1. <https://www.ncbi.nlm.nih.gov/>
2. <https://www.ebi.ac.uk/>
3. <https://www.rcsb.org/>
4. <https://www.uniprot.org/>
5. <https://scope-international.online/biostatistics/>
6. https://study.com/articles/How_to_Become_a_Research_and_Development_Biostatistician.html

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-476	ENVIRONMENTAL BIOTECHNOLOGY	2	
Course objectives:- The course is an introduction to environmental biotechnology and focuses on the utilization of microbial processes in waste and water treatment. Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • Understand the application of available energy sources. • Understand the current applications of biotechnology to environmental quality evaluation, monitoring and remediation of contaminated environments. 			
Unit I Renewable sources of Energy	Energy sources renewable – Solar energy, wind power, geothermal energy and hydropower, Biomass energy, Biogas technology - biogas plant & types, Bio digester. Biogas - composition, production and factors affecting production, uses. Biofuels – ethanol production. Microbial hydrogen production Biodiesel, Petrocrops.		15
Unit II Industrial effluent treatment	Biological processes for industrial effluent treatment - Aerobic biological treatment, Activated sludge process, CASP, Advanced activated sludge processes (any two) Biological filters, RBC, FBR Anaerobic biological treatment- Contact digesters, Packed bed reactors, Anaerobic baffled digesters, UASB. Solid waste treatment Pollution indicators & biosensors - Biodegradation of xenobiotics- persistent compounds, chemical properties influencing biodegradability, microorganisms in biodegradation. Use of immobilized enzymes or microbial cells for treatment.		15

Unit III Waste water treatment	Wastewater treatment: Introduction, Biological treatment, impact of pollutants on bio treatment, use of packaged organisms and genetically engineered organisms in waste treatment. Heavy metal pollution: Sources, microbial systems for heavy metal accumulation, techniques used for heavy metal removal. Bioremediation: Biosorption by bacteria, fungi and algae, factors affecting biosorption limitations of biosorption.		15
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Learner's space:

Learn production of zero carbon (or carbon negative) renewable fuels; Artificial Photosynthesis. Commercial application of use of consortia of microorganisms in Bioremediation.

MOOC:

1. Wastewater Treatment and Recycling - Course (nptel.ac.in), Duration - 12 weeks, Credit points - 3.
2. Environmental Biotechnology - Course (nptel.ac.in)

Pedagogy: Animated videos, Google classroom for E- Notes, Presentations, Group Discussion, YouTube videos, Case study of examples, E- Journals.

Reference books:

1. Environmental Biotechnology Allan Scragg Oxford University press
2. Environmental Biotechnology Indu Shekhar Thakur IK International (Basic concepts and applications).
3. Environmental Biotechnology by M. H. Fulekar
4. Environmental Biotechnology (Industrial pollution management) S. N. Jogdand, Himalaya Publishing house.
5. Environmental Chemistry – A. K. De

ICT backup:

1. <https://www.youtube.com/watch?v=3UafRz3QeO8>
2. <https://www.csir.res.in/achivement/csir-pride/energy>
3. <https://youtu.be/QRmaMtEtY8>
4. <https://youtu.be/67BvwMofkMU>
5. <https://youtu.be/uAyVcR17COs>

Course Code	Title	Credits	No. of Lectures
PUSBTIV22-477	RESEARCH METHODOLOGY	2	
Course objectives:- The objective of this course is to develop research aptitude, logical thinking and reasoning. Learning outcomes:- By the end of the course the student will be able to: <ul style="list-style-type: none"> • Understand basic principles of research methodology and identify a research problem. • Understand a general definition of research design. • Identify the overall process of designing a research study from its inception to its report. 			
UNIT I Introduction to Research Methodology and Research Problem	Meaning of Research; Objectives of Research; Motivation in Research; Types of Research; Research Approaches; Significance of Research; Research Methods versus Methodology; Research Process; Criteria of Good Research; Problems Encountered by Researchers in India; What is a Research Problem? Selecting the Problem; Necessity of Defining the Problem; Technique Involved in Defining a Problem		15
UNIT II Research Design and Data Collection	Meaning of Research Design; Need for Research Design; Features of a Good Design; Important Concepts Relating to Research Design; Different Research Designs; Basic Principles of Experimental Designs; Developing a Research Plan- Collection of Primary Data; Observation Method; Interview Method; Collection of Data through Questionnaires; Collection of Data through Schedules; Other Methods of Data Collection, Collection of Secondary Data, Selection of Appropriate Method for Data Collection, Case Study Method		15

UNIT III Interpretation and Report Writing	Meaning of Interpretation, Technique of Interpretation, Precaution in Interpretation - paraphrasing, Significance of Report Writing, Different Steps in Writing Report, Layout of the Research Report, Types of Reports, Oral Presentation, Mechanics of Writing a Research Report, Precautions for Writing Research Reports Bibliography (APA and MLA) Presenting Research: Oral and Poster Publication, Impact factor of Journals, H-Index, Plagiarism Research Organizations in Biological Sciences in India: DBT, DST, CCMB, NIV		15
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Learner's space:

Use of data collection methods in Semester VI projects, conducting survey-based research project, Exploring online software's for statistical analysis of data

MOOC:

1. <https://www.coursera.org/learn/research-methods>,
2. <https://www.coursera.org/specializations/data-collection>
3. <https://www.classcentral.com/course/swayam-academic-and-research-report-writing-20220>

Pedagogy: Google classroom, E-journals, Discussion, PPTs

Reference books:

1. Research Methodology: Methods and Techniques, C. R. Kothari, New Age International Publishers
2. Research Methods for the Biosciences. Holmes, Moody & Dine. Oxford University Press

ICT backup:

1. <https://gradcoach.com/what-is-research-methodology/>
2. [https://www.cusb.ac.in/images/cusb-files/2020/el/cbs/MCCOM2003C04%20\(Business%20Research%20Methods\)Research_Methodology_C_R_Kothari.pdf](https://www.cusb.ac.in/images/cusb-files/2020/el/cbs/MCCOM2003C04%20(Business%20Research%20Methods)Research_Methodology_C_R_Kothari.pdf)
3. <https://eduvoice.in/types-research-methodology/>
4. https://www.researchgate.net/publication/325546150_WRITING_RESEARCH_REPORT
5. <https://eduvoice.in/types-research-report-writing/>
6. <https://www.ox.ac.uk/students/academic/guidance/skills/plagiarism#:~:text=Plagiarism%20is%20presenting%20someone%20else's,is%20covered%20under%20this%20definition.>

PRACTICAL

SEMESTER IV		
Course code	Title	Credits
PUSBTIV22-P1 (PRACTICAL based on PUSBTIV22-471 and PUSBTIV22-472)	<ol style="list-style-type: none"> 1. Determination of Lactate Dehydrogenase (LDH) Activity in Blood Serum. 2. Organ Function Tests: Liver (SGPT, SGOT); Kidney (Urea from Serum). 3. Estimation of Uric acid and Creatinine in Urine. 4. Qualitative Detection of Ketone Body in Urine. 5. Isolation of Mitochondria and Demonstration of ETC using a Marker Enzyme. 6. Separation of Inorganic Binary (Solid-Solid) Mixture (Min 4 mixtures containing 2 cations and 2 anions). 7. Identification of Organic Compounds of Known Chemical Type (Min 4 Compounds). 8. Instrumentation - GC, HPLC, HPTLC analysis (Lab visit) 9. Qualitative detection of Secondary metabolites 10. Separation of any one secondary metabolite by TLC 11. Chemical and Biological Synthesis of Silver Nanoparticles and its characterisation by UV- Vis Spectrophotometer. 	2
Course code	Title	Credits
PUSBTIV22-P2 (PRACTICAL based on PUSBTIV22-473 and PUSBTIV22-474)	<ol style="list-style-type: none"> 1. Identification of <i>S. aureus</i>-Isolation, Catalase, Coagulase Test. 2. Identification of <i>E. coli</i>-Isolation, Sugar Fermentations, IMViC. 3. Identification of <i>Salmonella</i>- Isolation, Sugar Fermentations, TSI Slant. 4. Identification of <i>Pseudomonas</i> - Isolation, Urease test, Oxidase Test, TSI Slant. 5. RPR Test (Kit Based). 6. Permanent Slide- <i>Mycobacterium</i>. 7. Isolation, Quantitative Analysis and AGE of Genomic DNA from Yeast. 8. Isolation and Quantification of RNA from Yeast. 9. Restriction Mapping Problems. 10. RFLP- Kit Based. 11. DNA Amplification – PCR. 	2

Course code	Title	Credits
PUSBTIV22-P3 (PRACTICAL based on PUSBTIV22-475 and PUSBTIV22-476)	<ol style="list-style-type: none"> 1. MS Power point, MS Excel 2. Familiarization with NCBI, EMBL, DDBJ, PIR, KEGG Databases. 3. Use of NCBI BLAST Tool. 4. Pairwise and Multiple Sequence Alignment and Phylogeny. 5. Classification of Proteins using CATH/SCOP. 6. Visualization PDB Molecules using Rasmol/Raswin. 7. Determination of Total solids from an effluent sample. 8. Study of physico-chemical parameters (pH, colour, turbidity, BOD, COD) of an industrial effluent sample. 9. Most Probable Number (MPN) – Presumptive, Confirmed and Completed tests. 10. Bioremediation of metal. 11. Visit to STP / CETP 	2

Summer Training:

1. This should be taken up in the summer over a period of one month preferably in an immunology / veterinary / virology institute or a laboratory using recombinant DNA methods.
2. The students could also be assigned to assist a clinic (in a hospital), a fermentation plant, brewery or bakery and watch the various stages in brewing and baking and post-fermentation processing. Prior arrangement must be made on the mode of interaction of the educational institute with the clinic and the industry.

Evaluation pattern S.Y Biotechnology (Autonomous) 2022 -2023

1. **Core Courses:** The College will conduct all the Semester examinations of 100 marks per Theory Paper in the prescribed pattern of 40 marks of internal assessment/Project work and 60 marks for Semester end examination. **The student will have to secure a minimum of 40% marks in Internal assessment as well as Semester end examination per theory paper.**
2. In each semester, the student will have to submit a Project/Assignment/Journal for theory papers in the College before appearing for the Semester End Examination.
3. The Project work will be carried out by the student with the guidance of the concerned Faculty Member who will be allotted to the student as the Guide for the Project.
4. The College will conduct all the Semester examinations of 100 marks per Practical Paper at the end of each semester. **The student will have to secure a minimum of 40% marks in the examination per practical paper.**

Evaluation Pattern For S.Y.B.Sc. Biotechnology (Theory)

1.	INTERNAL ASSESSMENT		40 Marks
1.1	One class test (Objectives/ Multiple Choice)		20 Marks
1.2	Assignment/ Project/ Presentation/Book or Research paper review report/Business proposal presentation/Case-study		15 Marks
1.3	Active Participation, Overall performance		05 Marks
2.	EXTERNAL ASSESSMENT (Semester End Examination)		60 Marks
	N.B. 1. All questions are compulsory 2. All questions carry equal marks.		
	Q.1.	Based on Unit-I, II & III Multiple choice questions/Fill in the blanks /Match the column/Give one word/Name the following/Give an example/Explain the term/Define/Give significance/State the role of	12
	Q.2.	Unit-I Long Answer Question Short Answer Question	12 12/08/06 04/02
	Q.3.	Unit-II Long Answer Question Short Answer Question	12 12/08/06 04/02

	Q.4.	Unit-III Long Answer Question Short Answer Question	12 12/08/06 04/02
	Q.5.	Short Notes based on Unit I, II and III (Solve any three out of six)	12

Practical

EXTERNAL ASSESSMENT (Practical)	100 Marks
Experiment - 1(Major technique)	25
Experiment - 2 (Major technique)	25
Experiment - 3 (Minor technique)	15
Experiment - 4 (Minor technique)	15
Viva/Identification/Spots	10
Journal	10
TOTAL MARKS	100



**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND COMMERCE,
(AUTONOMOUS) DOMBIVLI (EAST), DIST. THANE**

(Affiliated to University of Mumbai)

Faculty of Commerce

**DEPARTMENT OF MANAGEMENT STUDIES
(Programme : Bachelor of Management Studies)**

**SYLLABUS FOR
S.Y.B.M.S. (Semester III and IV)
Choice Based Credit System (CBCS)
(with effect from the Academic Year: 2022-2023)**

Course Structure

SYBMS

<u>Course code</u>	<u>SEM III</u>	<u>Credit points</u>	<u>Course code</u>	<u>SEM IV</u>	<u>Credit points</u>
	<u>Elective courses :</u>			<u>Elective courses :</u>	
	<u>Finance</u>			<u>Finance</u>	
PUCMSIII 22-331	1. Equity & Debt Market	3	PUCMSIV 22-431	1. Financial Institutions & Markets	3
PUCMSIII 22-332	2. Corporate Finance	3	PUCMSIV 22-432	2. Auditing	3
	<u>Marketing</u>			<u>Marketing</u>	
PUCMSIII 22-333	3. Consumer Behaviour	3	PUCMSIV 22-433	3. Rural Marketing	3
PUCMSIII 22-334	4. Advertising	3	PUCMSIV 22-434	4. Tourism Marketing	3
	<u>Human Resource</u>			<u>Human Resource</u>	
PUCMSIII 22-335	5. Recruitment & Selection	3	PUCMSIV 22-435	5. Training & Development in HRM	3
PUCMSIII 22-336	6. Motivation and Leadership	3	PUCMSIV 22-436	6. Change Management	3
	<u>Compulsory courses</u>			<u>Compulsory courses</u>	
PUCMSIII 22-337	7. Information Technology in Business Management I	3	PUCMSIV 22-437	7. Information Technology in Business Management II	3
PUCMSIII 22-338	8. Foundation Course III (Environmental Management)	2	PUCMSIV 22-438	8. Foundation Course IV (Ethics and Governance)	2
PUCMSIII 22-339	9. Business Planning and Entrepreneurial Management	3	PUCMSIV 22-439	9. Business Economics	3
PUCMSIII 22-330	10. Accounting for Managerial Decisions	3	PUCMSIV 22-430	10. Business Research Methods	3
PUCMSIII 22-311	11. Strategic Management	3	PUCMSIV 22-411	11. Production and Total Quality Management	3
	Total Credits	20		Total Credits	20

Programme Outcome :. Acquiring ability to gain and apply Knowledge of Business Management principles in different aspects of Production, Quality assurance, Environment conservation, Ethical standards

Course Outcome : Gain knowledge about Production planning, Strategies, Research methods, Environmental issues, Ethics in Business world and also get insight of specialization subjects of Finance, marketing and Human Resource.

<u>Course code</u>	<u>SEM III</u>	<u>Credit points</u>
	<u>Elective courses :</u>	
	<u>Finance</u>	
PUCMSIII 22-331	1. Equity & Debt Market	3
PUCMSIII 22-332	2. Corporate Finance	3
	<u>Marketing</u>	
PUCMSIII 22-333	3. Consumer Behaviour	3
PUCMSIII 22-334	4. Advertising	3
	<u>Human Resource</u>	
PUCMSIII 22-335	5. Recruitment & Selection	3
PUCMSIII 22-336	6. Motivation and Leadership	3
	<u>Compulsory courses</u>	
PUCMSIII 22-337	7. Information Technology in Business Management I	3
PUCMSIII 22-338	8. Foundation Course III (Environmental Management)	2
PUCMSIII 22-339	9. Business Planning and Entrepreneurial Management	3
PUCMSIII 22-330	10. Accounting for Managerial Decisions	3
PUCMSIII 22-311	11. Strategic Management	3
	Total Credits	20

Electives : Finance : Equity and Debt Market

Modules at a Glance

Sr. No	Modules No.	No. . of Lectures	Credit points
1	Introduction to Financial Market	15	3
2	Dynamics of Equity Market	15	
3	Players in Debt Markets	15	
4	Valuation of Equity & Bonds	15	

Objective

1. Understand the importance of equity / Debt market in the financial system
2. Be acquainted with the general terminology of the equity / Debt market
3. Know the Financial markets which in turn will help them in framing the financial policies, development of financial instruments

Learning Outcome:-

1. Students learn general purpose of Equity / Debt Market
2. They understand how Equity market Domestic as well as International markets function
3. The course arises interest among students about Investments in capital market.

Total No of Credit point 3

Sr. No	Modules / Units	Lectures (60)
1.	<u>Introduction to Financial Market</u> • Equity market – Meaning & definitions of equity share; Growth of Corporate sector & simultaneous growth of equity shareholders; divorce between ownership and management in companies; development of Equity culture in India & current position. • Debt market – Evolution of Debt markets in India; Money market & Debt markets in India; Regulatory framework in the Indian Debt market.	15
2.	<u>Dynamics of Equity Market</u> Primary: 1)IPO – methods followed (simple numerical) 2) Book building 3)Role of merchant bankers in fixing the price 4) Numerical on sweat equity, ESOP & Rights issue of shares 5) Case study about Recent/ current IPO Domestic/ Foreign. Pre-market Trading. Secondary: 1)Definition & functions of stock exchanges 2) Evolution & growth of stock	

	exchanges 3)Stock exchanges in India 4)NSE, BSE OTCEI & overseas stock exchanges,5)Recent developments in stock exchanges 6) Stock market Indices Domestic as well as Overseas	
Sr. No	Modules / Units	Lecture (60)
3.	<u>Players in debt markets:</u> Players in debt markets: 1)Govt. securities 2)Public sector bonds & corporate bonds 3)open market operations 4)Security trading corp. of India 5)Primary dealers in Govt. securities Bonds: 1)Features of bonds 2)Types of bonds	15
4.	<u>Valuation of Equity & Bonds</u> Valuation of equity: 1. Balance sheet valuation 2. Dividend discount model (zero growth, constant growth & multiple growth) 3. Price earning model Valuation of bonds 1. Determinants of the value of bonds 2. Yield to Maturity 3. Interest rate risk 4. Determinants of Interest Rate Rise	

Justification:-

Student must know the Practical aspect and basic concepts to apply practically.

Job Oriented Skill Development Topics:-

1. Dynamics of Equity Market
2. Valuation of Equity & Bonds
3. Concept of Wall Street/ Foreign Exchange Dealers' Association of India

Leaner Space:-

1. Encourage Student to Work in Broking Firm (Angel/ Motiala Oswal / Sherkhan and much more) to get actual practical Experience.
2. Suggest students to learn to open Demat account
3. Inform Students to go through Annual Report of the Blue chip Company

Recommended Reference Book:

1. Allen, Larry (1750-2000). The Global Financial System.

2. Ian H. Giddy (1994). Global Financial Markets. Houghton Mifflin.
3. Saunders, Anthony & Cornett, Marica Millon. Financial markets & institutions: A modern perspective: TMIT
4. LM Bhole. Financial institutions & markets: Structure, growth & innovations. TMH (5th ed.)
5. Chandra, P. (2011). Corporate Valuation and Value Creation, (1st ed).
6. The Intelligent Investor by Benjamin Graham
7. Bond Markets, Analysis, and Strategies (7th Edition)

Recommended ICT backup

<https://www.bseindia.com>

<https://www.nseindia.com/>

<https://www.dsij.in/>

<https://wall-street.com/>

Pedagogy:-

- Discussion about SEBI, BSE, NSE and various stock exchanges
- Showing online session about the Equity market
- Group Discussion about the IPOs and case studies of Recent IPOs
- Interactive session about the market policies
- Sharing Finance news from News paper and other channels

MOOC Links :

<https://www.mooc-list.com/tags/equity-markets>

<https://www.edx.org/course/financial-analysis-for-decision-making>

Electives : Finance : Corporate Finance

Modules at glance

Sr. No	Modules	No of lectures Total 60	Credit Points
1.	Introduction to Finance	15	3
2.	Capital Structure and Leverage	15	
3.	Time Value of Money	15	
4.	Mobilisation of Funds	15	
		60	

Objectives:

1. To develop a conceptual framework of finance function.
2. To explain the core concepts of corporate finance and its importance in managing the business.
3. To provide understanding of nature, importance and structure of corporate finance and impart knowledge regarding financial decision making in business.

Learning Outcomes:

- Students learn general purposes and functions of corporate finance.
- They understand the key concepts and applications such as time value of money, cost of capital, Leverage, Security valuation, etc. which are required for investment decision making.
- At the end students will be able to determine discount rates, demonstrate proficiency in valuation techniques and also obtain knowledge about the Mobilisation of Funds

Total no. of Credits: 3

Proposed syllabus

	Modules/Units	Lectures (60)
UNIT-I	1) Introduction <ul style="list-style-type: none">• Introduction to Corporate Finance – Meaning, Principles of Corporate Finance, Significance of Corporate Finance, Amount of Capitalisation, Over Capitalisation & Under Capitalisation, Fixed capital & Working Capital funds• Introduction to ownership securities – Ordinary Shares,	15

	Preference Shares, Creditor Ship Securities, Debtors and Bonds, Convertible Debentures, Concept of Private Placement of Securities	
UNIT-II	2) Capital Structure and Leverage <ul style="list-style-type: none"> • Introduction to Capital Structure theories - EBIT - EPS analysis for Capital Structure decision • Cost of Capital – Cost of Debt, Cost of Preference Shares, Cost of Equity Shares and Cost of Retained Earnings, Calculation of Weighted Cost of Capital • Introduction to concept of Leverage – Operating Leverage, Financial Leverage and Combined Leverage 	15
UNIT-III	3) Time Value of Money <ul style="list-style-type: none"> • Introduction to Time Value of Money – compounding and discounting • Introduction to basics of Capital Budgeting (time value of money based methods) – NPV and IRR • Security Valuation – Relevance concept of Dividend (Gordon Growth model, Walter Model), Irrelevance Concept of Dividend, (MM theory, Residual Theory), Right Shares 	15
UNIT-IV	4) Mobilisation of Funds <ul style="list-style-type: none"> • Public deposits and RBI regulations, Company deposits and SEBI regulations, Protection and depositors, RBI and public deposits with NBFC's • Foreign Capital and collaborations, Foreign Direct Investments (FDI), Emerging Trends in FDI • Policy development, Capital Flows and Equity Debt • Brief Introduction & sources of short term Finance bank Overdraft, Cash Credit, Factoring • GDR, Private Equity & Start up Finance 	15

Justification:

Students will know the practical aspects and basic concepts which will be more useful for them.

Job oriented skill development topics:

1. Security Valuation
2. Sources of International Funds (ADR, GDR, etc.)
3. Foreign Capital & Collaboration
4. FDI & emerging trends in it

Learner space:

- ✓ Encouraging students to make a small investment in stocks and observe the trends

(whether increasing or decreasing) this practice will enable students to gain practical knowledge related to finance

- ✓ Suggesting students to read newspapers like Economic Times, Business Standard, etc. to keep watch on activities related to market and understand how companies at corporate level takes financial decisions.
- ✓ Asking students to discuss market and finance related activities with friends, colleagues, relatives for update with current financial affairs.

Recommended Reference Books:

1. Corporate Finance – By Shraddha Sharma, Riddhi Sharma (Sheth Publications)
2. Strategic Financial management – By A N Sridhar (Shroff Publishers)
3. International Finance Management – By Neeshu Sharma, Atul Sharma
4. Financial Management and Economics for Finance – By Institute of Chartered Accountants of India

Recommended ICT backup:

1. <https://www.youtube.com/>
2. https://www.icai.org/post.html?post_id=16959
3. <https://www.youtube.com/watch?v=sShMIzv9dpU>
4. <https://www.youtube.com/watch?v=rZHLK5Rjzks>
5. <https://www.investopedia.com/terms/c/costofcapital.asp>

Pedagogy

- Some students who take admission for the course may not be from Commerce background. So they need to give complete introduction of the subject. Basic things, concepts need to be taught.
- Commerce students will learn these topics at advanced level. So, they learn the topics like security valuation, Mobilisation of Funds, capital structure and leverage which are practically related to financial decision making.
- Practice through question answer session with classroom and homework assignments.
- Current affairs related to finance will be discussed with students through debate, quiz, etc.
- For explaining any concepts related to finance, real life examples and case scenarios will be discussed with students.

MOOC Links :

https://onlinecourses.nptel.ac.in/noc21_mg93/preview

<https://www.udemy.com/topic/corporate-finance/>

Electives : Marketing : Consumer Behaviour

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Introduction To Consumer Behavior:	14	3
2	Individual- Determinants of Consumer Behavior	16	
3	Environmental Determinants of Consumer Behavior	15	
4	Consumer decision making models and New Trends	15	
Total		60	

Objectives

SN	Objective
	<ul style="list-style-type: none">• The basic objective of this course is to develop an understanding about the consumer decision making process and its applications in marketing function of firms.• This subject typically aims to introduce students to the topics of consumer psychology and the buying patterns of different consumers.• It emphasizes that individuals should experience the simulated environment of the corporate world of decision making.• This subject describes a unique approach to teaching the above topics where student teams can select small local businesses with which to work during the semester and learn through practically interacting with the consumers of their selected businesses.

	Modules / Units
1	Introduction To Consumer Behaviour:
	<ul style="list-style-type: none"> • Meaning of Consumer Behavior, Features and Importance • Types of Consumer (Institutional & Retail), Diversity of consumers and their behavior- Types Of Consumer Behavior • Profiling the consumer and understanding their needs • Consumer Involvement • Application of Consumer Behavior knowledge in Marketing • Consumer Decision Making Process and Determinants of Buyer • Behaviour, factors affecting each stage, and Need recognition. • Customer Automated Decisions
2	Individual- Determinants of Consumer Behaviour
	<ul style="list-style-type: none"> • Consumer Needs & Motivation (Theories - Maslow, Mc Cleland). • Personality – Concept, Nature of personality, Freudian, non - Freudian and Trait theories, Personality Traits and it's Marketing significance, Product personality and brand personification. • Self-Concept – Concept • Consumer Perception • Learning - Theory, Nature of Consumer Attitudes, Consumer Attitude • Formation & Change. • Attitude - Concept of attitude • A Greater Human Element In Client Interactions
3	Environmental Determinants of Consumer Behaviour
	<ul style="list-style-type: none"> • Family Influences on Buyer Behaviour, • Group Dynamics & Consumer Reference Groups, Social Class & Consumer Behavior - Reference Groups, Opinion Leaders and Social Influences In- group versus out-group influences, role of opinion leaders in diffusion of innovation and in purchase process. • Cultural Influences on Consumer Behaviour Understanding cultural and sub- cultural influences on individual, norms and their role, customs, traditions and value system. • Increased Focus On Green Products
4	Consumer decision making models and New Trends

	<ul style="list-style-type: none"> • Consumer Decision making models: Howard Sheth Model, Engel Blackwell, Miniard Model, Nicosia Models of Consumer Decision Making • Diffusion of innovations Process of Diffusion and Adoption, Innovation, Decision process, Innovator profiles • E-Buying behavior The E-buyer vis-a vis the Brick and Mortar buyer, Influences on E-buying • Accelerated Online Buying • B2B Customers Gaining More Leverage • Growing Importance Of Content Marketing • Case Studies
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Learning Outcomes

- It will help students develop the skill of understanding and analyzing consumer information and using it to create consumer- oriented marketing strategies.
- After completion of the course, learners would be able to know variables that comprise and affect consumer behavior.
- Learn strategies to manage consumer behavior to help satisfy needs profitably
- Develop an understanding of consumer motivations and decision processes.

Learner space

Will be giving students case studies and presentations so that they learn to apply theory to Practical. Also will be suggesting students to take up internship so that they can get practical experience and knowledge of the subjects.

Job oriented topics

- Diversity of consumers and their behavior- Types Of Consumer Behavior, Consumer Decision making models, E-Buying behavior The E-buyer vis-a vis the Brick and Mortar buyer, Influences on E-buying

Justification

- The students should have knowledge about current trends on the market.
- With reference to case study, students become aware of different issues in corporate world and how they can be handled.

Recommended References Books:

- Schiffman, L.G., Kanuk, L.L., & Kumar, S.R. (2011). Consumer Behaviour. (10th ed.). Pearson.
- Solomon, M.R. (2009). Consumer Behaviour – Buying, Having, and Being. (8th ed.) New Delhi: Pearson .
- Blackwell, R.D., Miniard, P.W., & Engel, J. F. (2009). Consumer Behaviour. New Delhi: Cengage Learning.
- Hawkins, D.I., Best, R. J., Coney, K.A., & Mookerjee, A. (2007). Consumer Behaviour – Building Marketing Strategy. (9th ed.). Tata McGraw Hill.
- Loudan, David L and Bitta, A.J. Della Consumer Behaviour
- Kotler, P. & Keller, K. L. (2012). Marketing Management (Global Edition) (14th ed.). Pearson
- Nair, Suja R- Consumer Behaviour in Indian Perspective

Recommended ICT Backup:-

<https://www.forbes.com/sites/forbesbusinesscouncil/2021/03/15/15-customer-behavior-trends-emerging-this-year/?sh=380597e614d9>

<https://www.freedmaninternational.com/insights/8-current-trends-in-consumer-behaviour-around-the-world/>

<https://www.groundtruth.com/insight/consumer-trends-to-watch/>

Universities which were referred to modify syllabi in fresh autonomy.

- Savitribai Phule University, Pune
- Indira Gandhi Open University (IGNOU)
- Symbiosis International Deemed University, Pune

Pedagogy:

- Use of cases, simulations, projects and videos to achieve learning objectives in the Consumer Behavior Subject.
- Guest lectures - eminent professionals from the industry share their experiences and enable the aspiring students to broaden their vision.

MOOC Links :

1.https://www.edx.org/course/buyer-behaviour-and-analysis-course-v1curtinxmkt3x1t2022

2. https://www.edx.org/course/customer-centric-marketing-for-entrepreneurs-2

Electives : Marketing

Advertising

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Introduction to Advertising	15	3
2	Strategy and Planning Process in Advertising	15	
3	Creativity in Advertising	15	
4	Budget, Evaluation, Current trends and careers in Advertising	15	
Total		60	

Objectives

SN	Objectives
1	To understand and examine the growing importance of advertising
2	To understand the construction of an effective advertisement
3	To understand the role of advertising in contemporary scenario
4	To understand the future and career in advertising
5	To provide updated information related to the changes in the marketing environment.
6	To understand and convey the various ways and techniques which a business concerns can tapped the market in an efficient way.

Sr. No.	Modules / Units
1	Introduction to Advertising
	<ul style="list-style-type: none"> • Definition, Evolution of Advertising, Importance, Scope, Features, Benefits, Five M's of Advertising • Types of Advertising –consumer advertising, industrial advertising, institutional advertising, classified advertising, national advertising, generic advertising, Referral advertising - meaning, features, benefits and limitations • Theories of Advertising : Stimulus Theory, AIDA, Hierarchy Effects Model, Means – End Theory, Visual Verbal Imaging, Cognitive Dissonance • Ethics and Laws in Advertising : Puffery, Shock Ads, Subliminal Advertising, Weasel Claim, Surrogate Advertising, Comparative Advertising Code of Ethics, Regulatory Bodies, Laws and Regulation – CSR, Public Service Advertising, Corporate Advertising, Advocacy Advertising • Social, cultural and Economic Impact of Advertising, the impact of ads on Kids, Women and Advertising
2	Strategy and Planning Process in Advertising
	<ul style="list-style-type: none"> • Advertising Planning process & Strategy : Introduction to Marketing Plan, Advertising Plan- Background, situational analysis related to Advertising issues, Marketing Objectives, Advertising Objectives, Target Audience, Brand Positioning (equity, image personality), creative Strategy, message strategy, media strategy, Integration of advertising with other communication tools • Role of Advertising in Marketing Mix : Product planning, product brand policy, price, packaging, distribution, Elements of Promotion, Role of Advertising in PLC • Advertising Agencies – Functions – structure – types - Selection criteria for Advertising agency –Maintaining Agency–client relationship, Agency Compensation.
3	Creativity in Advertising

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	<ul style="list-style-type: none"> • Introduction to Creativity – definition, importance, creative process , Creative strategy development – Advertising Campaign – determining the message theme/major selling ideas – introduction to USP – positioning strategies – persuasion and types of advertising appeals – role of source in ads and celebrities as source in Indian ads – execution styles of presenting ads. • Role of different elements of ads – logo, company signature, slogan, tagline, jingle, illustrations, etc– • Cross selling concept. • Creating the TV commercial – Visual Techniques, Writing script, developing storyboard, other elements (Optical, Soundtrack,Music) • Creating Radio Commercial – words, sound, music – scriptwriting the commercial – clarity, coherence, pleasantness, believability, interest, distinctiveness • Copywriting: Elements of Advertisement copy – Headline,sub-headline, Layout, Body copy, slogans. Signature, closing idea, Principles of Copywriting for print, OOH, essentials of good copy, Types of Copy, Copy Research, In-door advertising – meaning and examples
Sr. No.	Modules / Units
4	Budget, Evaluation, Current trends and careers in Advertising
	<ul style="list-style-type: none"> • Advertising Budget – Definition of Advertising Budget, Features, Methods of Budgeting • Evaluation of Advertising Effectiveness – Pre-testing and Post testing Objectives, Testing process for Advertising effectiveness, Methods of Pre-testing and Post-testing, Concept testing v/s Copytesting. • Current Trends in Advertising : Rural and Urban Advertising, Digital Advertising, Content Marketing (Advertorials), retail advertising, lifestyle advertising, Ambush Advertising, Global Advertising – scope and challenges – current global trends, • Careers in Advertising : careers in Media and supporting firms, freelancing options for career in advertising ,role of Advertising Account Executives, campaign Agency family tree – top most advertising agencies and the famous advertisements designed by them.

Learning outcomes.

- New topics ensures the students get the primary information related to the advertising aspects.
- Some topics which is currently practiced in national and international market which provide self employment or entrepreneurship activity in the mindset of new generation.
- After the completion of course , many students can become capable to start their own business and grab the best opportunity in a reputed firms.

Learner space.

Assigning projects and presentation, solving case studies and discussion on the related topic of the subjects help the students to know the updated information of advertising. Students can go for internship which help them to get practical experience related to business and job opportunities.

Job oriented topics

The whole topic influences and initiates to get basic and updated information of advertising which can be applied during the job tenure or establishing their own business.

Justification

Some new topics are currently practiced in day to day life and created a great and reputed place in the market which students should know. From that concepts, many students may start their own firm and generate employment opportunities and help to generate economic growth for the nation.

Recommended References Books:

1. Belch, Michael, "Advertising and Promotion: An integrated marketing communications perspective" Tata McGraw Hill 2010
2. Mohan, Manendra "Advertising Management Concept and Cases", Tata McGraw Hill 2008
3. Kleppner, Russell J; Thomas, Lane W, "Advertising Procedure", Prentice Hall 1999
4. Shimp, Terence, "Advertising and promotion : An IMC Approach", Cengage Learning 2007
5. Sharma, Sangeeta and Singh, Raghuvir "Advertising planning and Implementation", Prentice Hall of India 2006
6. Clow, Kenneth E and Baack, Donald E "Integrated Advertising Promotion and Marketing Communication", Pearson Edu 2014
7. Duncan, Tom, "Principles of Advertising and IMC", Tata McGraw Hill Pub 2006

Recommended ICT Backup:-

- https://en.wikipedia.org/wiki/Referral_marketing#:~:text=Referral%20marketing%20is%20a%20word,contacts%20to%20become%20new%20customers.
- <https://www.yourarticlelibrary.com/marketing/marketing-management/packaging-and-branding/what-is-packaging/99721>
- <https://www.wordstream.com/online-advertising>
- https://en.wikipedia.org/wiki/Brand_ambassador

Universities which were referred to modify syllabi in fresh autonomy.

- Savitribai phule pune university, PUNE.
- Delhi university, DELHI.

Pedagogy:

Faculties can use group discussion, case studies discussion, presentation, role play to elaborate the important aspects of advertising in business activities.

Eminent professor from different universities and corporate delegates can be welcomed for the more discussion and provide information related to advertising which influences and convey the better opportunities in job as well as entrepreneurial activities.

MOOC Links :

1.<https://www.edx.org/course/digital-marketing-strategy-course-v1edinburghxdm12pcx1t2022>

2. <https://www.edx.org/course/reputation-management-in-a-digital-world-course-v1curtinxmk2x1t2022>

Electives : Human Resource : Recruitment & Selection

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Recruitment	18	3
2	Selection	15	
3	Induction	15	
4	Soft Skills	12	
Total		60	

Objectives

SN	Objective
1	The objective is to familiarize the students with concepts and principles, procedure of Recruitment and Selection in an organization.
2	To give an in depth insight into various aspects of Human Resource management and make them acquainted with practical aspect of the subject.
3	To provide basic and essential information related towards the working style and maintain sincerity in work.
4	To understand and provide the information related to attire and etiquette which exist in every organization which have to be carry during work tenure
5	To study and enhance the cooperation and better communication among the employees which results in the better welfare of organization.

Sr. No.	Modules / Units
1	Recruitment
	<ul style="list-style-type: none"> • Concepts of Recruitment- -Meaning, Objectives, Scope &Definition, Importance and relevance of Recruitment. • Job Analysis--Concept, Specifications, Description, Process And Methods, Uses of Job Analysis • Job Design--Introduction, Definition, Modern Techniques, Factors affecting Job Design, Contemporary Issues in Job Designing. • Source or Type of Recruitment– a) Direct/Indirect, b)Internal/ External. Internal-Notification, Promotion– Types, Transfer –Types, Reference External-Campus Recruitment, Advertisement, Job Boards Website/Portals, Internship, Placement Consultancies-Traditional (In-House, Internal Recruitment, On Campus, Employment And Traditional Agency). Modern (Recruitment Books, Niche Recruitments, Internet Recruitment, Service Recruitment, Website and Job, Search Engine, Social Recruiting and Candidate Paid Recruiters). • Technique of Recruitment-Traditional Vs Modern Recruitment • Evaluation of Recruitment-Outsourcing Programme
2	Selection
	<ul style="list-style-type: none"> • Selection-Concept of Selection, Criteria for Selection,Process, Advertisement and Application (Blank Format). • Screening-Pre and Post Criteria for Selection, Steps ofSelection • Interviewing-Types and Guidelines for Interviewer & Interviewee, Types of Selection Tests, Effective Interviewing Techniques. • Selection Hurdles and Ways to Overcome Them
3	Induction
	<ul style="list-style-type: none"> • Induction-Concept, Types-Formal /Informal, Advantages of Induction ,How to make Induction Effective • Orientation &On boarding- Programme and Types, Process. • Socialisation-Types-Anticipatory, Encounter, Setting in, Socialisation Tactics • Body language at work • Current trends in Recruitment and Selection Strategies–with respect to Service, Finance, I.T., Law And Media Industry
4	Soft Skills
	<ul style="list-style-type: none"> • Preparing Bio-data and C.V. • Social and Soft Skills – Group Discussion &Personal Interview, Video and Tele Conferencing Skills, • Business attire. • Presentation and Negotiation Skills, Aesthetic Skills, • Etiquettes-Different Types and Quitting Techniques. • Etiquette towards Basic disability people and diversity workforce

	<ul style="list-style-type: none"> Exit Interview-Meaning, importance.
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Learning Outcomes

The basic idea while studying the subjects will help you to learn sincerity and respects towards individuals.

Professional etiquette and business attire give rise to the complete and relevant kind of employees which actually the organization needs.

Learn new social skills which help the individual to gain respect in organization as well as in society.

Learner space

This subject analyse and focus on the recruitment and selection procedure as well as after getting the job, how to perform the given activities in a legal, sincere, and ethical way is also considered. Case studies and role play will provide the information in a unique way to make the concept understand very easily.

- Job oriented topics : Technique of Recruitment, Evaluation of Recruitment, Screening ,Interviewing, Selection hurdles, Soft skills and Business Etiquettes**

Justification

I have added some topics which pinpoint the changes in the behavior towards person with disabilities and even provide the basic knowledge to carry professionalism not only through the work but also from their behavior towards work and their colleagues.

Recommended References Books:

1. Dipak Kumar Bhattacharya - Human ResourceManagement
2. ArunMonappa- Managing Human Resource.
3. C.B. Memoria -Personnel Management-
4. Armstrong, Michael & Baron Angela. (2005).
Handbook of Strategic HRM (1sted.). New Delhi:
Jaico PublishingHouse.
5. Mello,JeffreyA.(2007).*StrategicHumanResourceManagement*(2nde d.).India:ThomsonSouth Western.

Recommended ICT Backup:-

- <https://work.chron.com/difference-between-contingent-workers-outsourcing-14562.html>
- <https://www.indeed.com/career-advice/starting-new-job/guide-to-business-attire>
- <https://wecapable.com/disability-etiquette-basics/#:~:text=Disability%20etiquette%20are%20manners%20that,with%20a%20person%20with%20disability.&text=In%20fact%20the%20first%20etiquette,to%20be%20treated%20as%20normal.>

Universities which were referred to modify syllabi in fresh autonomy.

- Gujarat technological university, GUJARAT.
- Savitribai Phule Pune University, Pune

Pedagogy:-

- Faculties Can Conduct Presentation, Role Plays And Group Discussion To Make Understood The Working Style Of Employees In Organization And How To Make Their Behavior Sensible And Effective.
- Eminent experts and delegates from corporate can give guest lectures and make aware about the life of corporate working style for the students which are essential in nature for them.

MOOC Links :

1. <https://www.edx.org/course/managing-a-diverse-and-inclusive-workplace-for-public-libraries-course-v1michiganxpublib602x2t2021>

2. <https://www.edx.org/course/getting-the-right-person-course-v1ucxpsy021ucx1t2022>

Group C. Human Resource Electives

2. Motivation & Leadership

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>	<u>Credit points</u>
1.	Motivation-I	15	3
2.	Motivation-II	15	
3.	Leadership I	15	
4.	Leadership II	15	

SR NO	Modules	No of lectures
1	Motivation-I Concept of motivation, Importance, Tools of Motivation. • Theory Z, Equity theory. • Process Theories-Vroom's Expectancy Theory, Valence-Four drive. Intrinsic Motivation- Self -determination theory , Daniel Pink Motivation theory	16
2	Motivation-II East v/s West, motivating workers (in context to Indian workers) • The Indian scene – basic differences. • Work –Life balance – concept, differences, generation and tips on work life balance. Work life balance & work from home. , Challenges faced by Women employees in Managing Work life balance.	16
3	Leadership-I Leadership– Meaning, Traits and Motives of an Effective Leader, Styles of Leadership. • Theories –Trait Theory, Behavioural Theory, Path Goal Theory. Situational leaders • Transactional v/s Transformational leaders • Strategic leaders– meaning, qualities. • Charismatic Leaders– meaning of charisma, Qualities, characteristics, types of charismatic leaders (socialized, personalized, office-holder, personal, divine) Difference between leader & Manager	17
4	Leadership-II Great leaders, their style, activities and skills (Ratan Tata, Narayan Murthy, Dhirubhai Ambani , Bill Gates, Mark Zuckerberg, Donald Trump) (In class room discussion & Presentations) Women Business Leaders	11

	<ul style="list-style-type: none"> • Characteristics of creative leaders and organization methods to enhance creativity (Andrew Dubrein) <p>4 P's of innovation,</p> <p>Art of using Negotiations for an effective leadership.</p> <ul style="list-style-type: none"> • Contemporary issues in leadership—Leadership roles, team leadership, mentoring, self -leadership, online leadership, finding and creating effective leader. <p>Role of a leader in team building</p> <p>Strategies for Leading Virtual Teams</p>	
	TOTAL Lectures	60

Skill enhancement Topic: Role of a leader in team building, & strategies for leading virtual teams

➤ **Objectives**

1. To gain knowledge of the leadership strategies for motivating people and changing organizations
2. To study how leaders facilitate group development and problem solving and work through problems and issues as well as transcend differences
3. To acquaint the students about practical approaches to Motivation and Leadership & its application in the Indian context.
4. To study how leaders facilitate group development and problem solving and work through problems and issues as well as transcend differences

➤ **Course Outcomes:**

CO 1: Learners will be able to understand the concept of Motivation & its theories and its relevance in motivating employees

CO 2: Learners will be able to understand leadership analyse different theories of leadership and evaluate qualities of an effective leader

CO 3: Learners will be able to apply aspects of leadership.

Pedagogy

Unit 1 of the subject gives a basic idea about the concept of Motivation, how effective it is as a tool to enhance organizations productivity and attain dual goal benefits of employee and organizations growth. Here introduction of more motivational theories and discussion on case studies can impart better understanding of the concept. Here quiz can be conducted

Unit 2 throws light on a comparative analysis on work cultural differences among east & west culture. Here articles and online videos can be shared with learners. The concept of work life balance can be further illustrated with the help of what if scenarios discussion & case studies.

Unit 3. Module 3 will get learners acquainted with the concepts of Leadership, theories & qualities. Here group projects can be given so that team building and leadership among students will be established. Here quiz on the topics can be conducted, Videos can also be shown to students also with open ended discussion.

Unit 4: Great leaders can be taught to students by assigning the individual projects of famous leaders in the corporate world their success stories will help learners get an insight on leadership. In addition to this they will also be aware about the skill set required to be effective leader in virtual corporate world. Here Role plays and group discussions can be conducted

➤ **Learner's space:** Learners can collect secondary data from internet about success stories and challenges faced by famous business leaders from different sectors.

➤ **Recommended ICT**

1. <https://nptel.ac.in/courses/110/106/110106151/> Department of Management studies IIT Madras – NPTEL

➤ **List of universities referred**

1. Pune university
2. London school of Economics & Political Science

➤ **List of Reference books**

1. French Wendell, Bell Cecil and Vohra Veena. (2004). Organization Development, Behavioral Science Interventions for Organization Improvement. (6th ed)
2. Niraj Kumar- Organisational Behaviour: A New Looks (Concept, Theory & Cases), Himalaya Publishing House
3. The mentor leader: secrets to build people & team by tony dungy 2010
4. The IUP Journal of Organizational Behavior

➤ **MOOC'S courses :**

- 1 .Leading in the Digital Age - **Starts Jun 22, 2022**
Ends Aug 10, 2022 Platform – EDX

2. Institution: Catalyst X

Subject: Communication

Level: Introductory Prerequisites:

None Language: English, Video Transcript: English Associated programs:

Professional Certificate in Inclusive Leadership

Platform : EDx

Information Technology in Business Management -I

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>	<u>Credit points</u>
<u>1.</u>	Introduction to IT Support in Management	15	3
<u>2.</u>	Office Automation using MS-Office	15	
<u>3.</u>	Email, Internet and its Applications	15	
<u>4.</u>	E-Security	15	

Objectives of the course:

1. To learn basic concepts of Information Technology, its support and role in Management, for managers.
2. Module II comprises of practical hands-on training required for office automation. It is expected to have practical sessions of latest MS-Office software.
3. To understand basic concepts of Email, Internet and websites, domains and security therein.
4. To recognize security aspects of IT in business, highlighting electronic transactions, advanced security features.

Desired Outcomes:

1. To explain the various Information systems and its major components
2. Learners will gain skill in latest MS-Office software, understand basic concepts of Email, Internet and websites, domains and security there in, security aspects of IT in business, highlighting electronic transactions, advanced security features.

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>
<u>1.</u>	<p>Information Technology concepts Concept of Data, Information and Knowledge Concept of Database Introduction to Information Systems and its major components. Types and Levels of Information systems. Main types of IT Support systems Computer based Information Systems (CBIS)</p> <p>Types of CBIS - brief descriptions and their interrelationships/hierarchies Office Automation System(OAS) Transaction Processing System(TPS) ♣Management Information System(MIS) Decision Support Systems (DSS) Executive Information System(EIS) Knowledge based system, Expert system Success and Failure of Information Technology. Failures of Nike and AT&T IT Development Trends.</p>	<u>20</u>

	<p>Major areas of IT Applications in Management Concept of Digital Economy and Digital Organization. IT Resources Open Source Software - Concept and Applications. Study of Different Operating Systems. (Windows / Linux/ DOS)</p> <p>Emerging Technologies-Cloud computing,</p> <p>Artificial Intelligence</p> <p>Digital Marketing</p>	
<u>2.</u>	<p>Office Automation using Ms office</p> <p>Learn Word: Creating/Saving of Document Editing and Formatting Features Designing a title page, Preparing Index, Use of SmartArt Cross Reference, Bookmark and Hyperlink. Mail Merge Feature.</p> <p>Spreadsheet application (e.g. MS-Excel/openoffice.org) Creating/Saving and editing spreadsheets Drawing charts. Using Basic Functions: text, math & trig, statistical, date & time, database, financial, logical Using Advanced Functions : Use of VLookup/HLookup Data analysis – sorting data, filtering data (AutoFilter , Advanced Filter), data validation, what-if analysis (using data tables/scenarios), creating sub-totals and grand totals, pivot table/chart, goal seek/solver,</p> <p>Presentation Software Creating a presentation with minimum 20 slides with a script. Presenting in different views, Inserting Pictures, Videos, Creating animation effects on them Slide Transitions, Timed Presentations Rehearsal of presentation</p>	<u>15</u>
<u>3.</u>	<p>Email, Internet and its Applications</p> <p>• Introduction to Email Writing professional emails Creating digitally signed documents.</p> <p>Use of Outlook : Configuring Outlook, Creating and Managing profile in outlook, Sending and Receiving Emails through outlook Emailing the merged documents. Introduction to Bulk Email software</p> <p>Internet Understanding Internet Technology Concepts of Internet, Intranet, Extranet Networking Basics, Different types of networks. Concepts (Hubs, Bridges, Routers, IP addresses) Study of LAN, MAN, WAN</p> <p>DNS Basics. Domain Name Registration, Hosting Basics.</p> <p>Emergence of E-commerce and M-Commerce Concept of E-commerce and M-Commerce Definition of E-commerce and M-Commerce Business models of e-commerce: models based on transaction party (B2B, B2C,B2G, C2B, C2C, E-Governance) Models based on revenue models, Electronics Funds Transfer, Electronic Data Interchange.</p>	<u>10</u>

<u>4.</u>	<p>E-Security System</p> <p>Threats to Computer systems and control measures. Types of threats Virus, hacking, phishing, spyware, spam, physical threats (fire, flood, earthquake, vandalism) Threat Management.</p> <p>IT Risk Definition, Measuring IT Risk, Risk Mitigation and Management</p> <p>Information Systems Security</p> <p>Security on the internet Network and website security risks Website Hacking and Issues therein. Security and Email</p> <p>E-Business Risk Management Issues Firewall concept and component, Benefits of Firewall</p> <p>Understanding and defining Enterprise wide security framework</p> <p>Information Security Environment in India with respect to real Time Application in Business Types of Real Time Systems, Distinction between Real Time, On – line and Batch Processing System. Real Time Applications viz. Railway / Airway / Hotel Reservation System, ATMs, EDI Transactions - definition, advantages, examples; ECash, Security requirements for Safe E-Payments Security measures in International and Cross Border financial transactions</p> <p>Threat Hunting Software</p>	<u>15</u>

LEARNER'S SPACE:

1. Encouraging students to learn free certification course from udemy and IBM.
2. Suggesting students to read news about current Technology.
3. Students are asked to prepare ppt and present the information they have collected through various sources.
4. Encouraging students to make PPT's on current technology.
5. Asking students to en-roll for certification courses on Artificial intelligence, cloud Computing.

RECOMMENDED REFERENCES BOOKS:

1. Information Technology for Management, 6TH ED (With CD) By Efraim Turban, Dorothy Leidner, Ephraim Mclean, James Wetherbe (Ch1, Ch2)
2. Microsoft Office Professional 2013 Step by Step By Beth Melton, Mark Dodge, Echo Swinford, Andrew Couch
3. Tata McGraw Hill Joseph, P.T. : E-commerce An Indian Perspective (Ch-13,Ch-14)
4. Computer Viruses and Related Threats: A Management Guide (Ch-2, Ch-3) By John P. Wack, Lisa J. Carnahan
5. Fundamentals of Computers — Prentice Hall Rajaram V V – Edition
6. Cloud Computing for business the open group guide

RECOMMENDED ICT BACKUP:-

1. <https://azure.microsoft.com/en-in/overview/what-is-cloud-computing/#benefits>
2. <https://www.javatpoint.com/internet>
3. <https://www.javatpoint.com/e-mail>
4. <https://www.ibm.com/in-en/cloud/learn/what-is-artificial-intelligence>
5. <https://downloads.cloudsecurityalliance.org/initiatives/guidance/Open-Group-Cloud-Computing-Book.pdf>

SYLLABI REFERRED FROM:

1. Delhi university
2. Pune university

PEDAGOGY:

1. Encouraging students for team building activities and give a glimpse of the real world.
2. Hands-on practical on Excel, power point and Ms-word.
3. A combination of innovative teaching methods, guest speakers, hands-on experience of new technology.
4. Showing technology related videos.

LIST OF MOOC PROGRAM:

1. Excel for Data Management
2. Digital Marketing Strategy
3. Basic Network and Database Security
4. Business Analysis Courses

<https://www.edx.org/professional-certificate/upvalenci-ix-it-fundamentals-for-business-professionals>

Skill Enhancement Courses

Foundation Course III – Environmental Management
Modules at a Glance

Total Credit Points : 2

Sr. No.		No. of Lectures	Credit points
1	Environmental Concepts	12	2
2	Environment degradation	11	
3	Sustainability and role of business	11	
4	Innovations in business- an environmental Perspective	11	
Total		45	

Objectives : To make students aware , sensitive about Environmental changes and its impact on the Business world

Learning Outcomes :

- ✓ Students understand the responsibility as a Citizen and Resident to protect the environment.
- ✓ Students know the ways of conservation and ways of waste management.
- ✓ Students realize the importance of Recycle, Reuse to reduce wastes and ways to reduce pollution.

Sr. No.	Modules / Units
1	Environmental Concepts:
	<ul style="list-style-type: none"> • Environment: Definition and composition, Lithosphere, Atmosphere, Hydrosphere, Biosphere • Biogeochemical cycles - Concept and water cycle • Ecosystem & Ecology; Food chain, food web & Energy flow pyramid • Resources: Meaning, classification(Renewable & non-renewable), types & Exploitation of Natural resources in sustainable manner • Rain Water Harvesting; Meaning, Procedure, advantages and limitations • Case studies
2	Environment degradation
	<ul style="list-style-type: none"> • Degradation-Meaning and causes, degradation of land, forest and agricultural land and its remedies • Pollution – meaning, types, causes and remedies (land, air, water and others) • Global warming: meaning, causes and effects. • Disaster Management: meaning, disaster management cycle. • Waste Management: Definition and types -solid waste management anthropogenic waste, e-waste & biomedical waste (consumerism as a cause of waste) <p>Case studies of Pollutions, Global warming, Disaster management and Waste management</p> <p>Career and employment opportunities related to Pollution control, Disaster Management and Waste Management</p>
3	Sustainability and role of business
	<ul style="list-style-type: none"> • Sustainability: Definition, importance and Environment Conservation. Paperless business transactions using Advanced tools and Techniques • Environmental clearance for establishing and operating Industries in India. • EIA, Environmental auditing, ISO 14001 • Salient features of Water Act, Air Act and Wildlife Protection Act. • Carbon bank & Kyoto protocol
4	Innovations in business- an environmental perspective
	<p>Non-Conventional energy sources- Wind, Bio-fuel, Solar, Tidal and Nuclear Energy.</p> <p>Innovative Business Models: Eco-tourism, Green marketing, Organic farming, Eco-friendly packaging, Waste management projects for profits ,other business projects for greener future</p> <p>Case studies</p>

Projects / Assignment for Internal Evaluation :

- i. Projects/Assignments should be drawn for the component on Internal Assessment from the topics in **Module 1 to Module 4**.
- ii. Students should be given a list of possible topics - at least 3 from each Module at the beginning of the semester.
- iii. The Project/Assignment can take the form of Street-Plays / Power-Point Presentations / Poster Exhibitions and similar other modes of presentation appropriate to the topic.
- iv. Students can work in groups of not more than 8 per topic.
- v. Students must submit a hard / soft copy of the Project / Assignment before appearing for the semester end examination.

Job Oriented topics :

Waste Management, Disaster Management , Innovations in Business, Laws related to Environmental issues

Reference Books :

1. Environmental Problems and Solutions, S. Chand, New Delhi, 2012.
2. Bajpai, Asha, C Mohapatra, Gaur Krishna Das, Environmental Ecology, Vikas, Noida, 2008.
3. Motilal, Shashi, and Nanda, Bijoy Lakshmi, Human Rights: Gender and Environment, Allied Publishers, New Delhi, 2007.
4. Murthy, D. B. N., Disaster Management: Text and Case Studies, Deep and Deep Publications, New Delhi, 2013
5. Environment Management , N.K. Uberoi , Excel Books, Delhi
6. Environmental Management - Text & Cases, Bala Krishnamoorthy, Prentice Hall of India
7. Environmental Management- National and global Perspectives, Swapan C. Deb , JAICO
8. Environmental Management , Dr.Anand S. Bal , Himalaya Publishing House
9. Environmental Priorities in India , Khoshoo , Environmental Society (N.Delhi)

ICT Back up :

<https://www.wm.com/>

<https://ndma.gov.in/>

<https://okcredit.in/blog/eco-friendly-business-ideas/>

<https://openknowledge.worldbank.org/handle/10986/31210>

<https://unfccc.int/process/the-kyoto-protocol/mechanisms/emissions-trading>

Pedagogy :

1. Students are given group activity to do presentations related to the Environmental issues.
2. Group Discussion is arranged on current developments for conservation of resources and Nature.
3. Real examples with case studies are discussed to know the movements taking place at domestic and global level.
4. Effects of human intervention with Nature and the remedies to improve the current conditions are discussed giving opportunity to all.
5. Ways are discussed the way we can contribute as a responsible citizen of the country towards Environment Protection.
6. Field visits if possible to waste management plant, Recycling plant in the neighboring areas.

MOOC Links :

<https://www.edx.org/course/circular-economy-for-a-sustainable-built-environment?index=product&queryID=3d7cb087c902b3312788453db64a77ec&position=3>

Business Planning & Entrepreneurship Management

Modules at glance:

Sr. No	Modules	No of lectures Total 60	Credit Points
1.	Foundations of Entrepreneurship Development	15	3
2.	Types and Classification of Entrepreneurs	15	
3.	Entrepreneur Project Development & Business Plan	15	
4.	Venture Development and Small Scale Industries	15	
		60	

Objectives:

1. To develop entrepreneurs & to prepare students to take the responsibility of full line of management function of a company with special reference to SME sector.
2. To develop an entrepreneurial way of thinking that will allow students to identify & create business opportunities that may be commercialized successfully.
3. To motivate students to look at entrepreneurship is viable, lucrative & preferred career.

Learning Outcomes:

1. Students will be able to have the ability to discern distinct entrepreneurial traits.
2. Students may know the parameters to assess opportunities & constraints for new business ideas.
3. Students will be able to understand the systematic process to select & screen a business idea.

Total no. of Credits: 3

Proposed syllabus

	Modules/Units	Lectures (60)
UNIT-I	Foundations of Entrepreneurship Development : <ul style="list-style-type: none">• Foundation of Entrepreneurship Development : Concept and Need of Entrepreneurship Development, Definition of Entrepreneur, Entrepreneurship, Importance and significance of growth of entrepreneurial activities, Characteristics and qualities of entrepreneurs• Theories of Entrepreneurship : Innovation theory by Schumpeter & limiting Theory of High Achievement by Mc Clell and X-Efficiency Theory by Leibenstein Theory of Profit by Knight, Theory of Social	15

	<p>change by Everett Hagen</p> <ul style="list-style-type: none"> • External Influence on Entrepreneurship Development : Socio-Cultural, Political, Economic, Personal, Role of Entrepreneurial culture in Entrepreneurship Development 	
UNIT-II	<p>Types & Classification of Entrepreneurs</p> <ul style="list-style-type: none"> • Entrepreneur – Concept and Development of Entrepreneurship • Women Entrepreneur – concept, development and problems faced by Women Entrepreneurs, Development of Women Entrepreneurs with reference to Self Help Group • Social Entrepreneurship – concept, development of Social Entrepreneurship in India, Importance of Social Responsibility of NGO's • Rural Entrepreneurship - concept and developments • Entrepreneurial Development Programme (EDP) – concept, Option available to Entrepreneur. (Ancillarisation, BPO, Franchise, M&A) 	15
UNIT-III	<p>Entrepreneur Project Development & Business Plan</p> <ul style="list-style-type: none"> • Innovation, Invention, Creativity, Business Idea, Opportunities through change • Idea generation – Sources, Development of product/idea • Environmental scanning and SWOT analysis • Creating Entrepreneurship Venture- Entrepreneurship Development Cycle • Business Planning Process – The business plan as an Entrepreneurial tool, scope and value of Business plan • Elements of Business Plan, Objectives, Market and Feasibility Analysis, Marketing, Finance, Organisation and Management, Ownership • Critical Risk Contingencies of the proposal, Scheduling and Milestones 	15
UNIT-IV	<p>Venture Development & Small Scale Industries</p> <ul style="list-style-type: none"> • Steps involved in starting of Venture • Venture funding, requirements of Capital (Fixed and Working), Sources of Finance, problems of Venture set-up and Prospects • New Trends in entrepreneurship • Sickness in Small Industries – reasons and rehabilitation • Micro & small scale Industries – Role of Government in small scale industries 	15

Justification:

Students will know the practical aspects and basic concepts which will be more useful for them.

Skill development topics:

1. Rural Entrepreneurship – concept & developments
2. Sickness in Small Industries
3. Micro & Small scale Industries

Learner space:

- ✓ Encouraging students to start some venture on small scale to understand how business works & their entrepreneurial skill might develop.
- ✓ Suggesting students to read about management practices in business & evolving trends in modern business to keep themselves updated.
- ✓ Asking students to watch various business venture videos on youtube which will develop their knowledge about business.

Recommended Reference Books:

1. Entrepreneurship: Strategies and Resources – Marc Dollinger, Prentice Hall
2. Entrepreneurship in Action – Mary Coulter, Prentice Hall
3. Bringing New Technology to Market – Kathleen R Allen

Recommended ICT backup:

1. <http://ediindia.ac.in/e-policy>
2. http://en.wikipedia.org/wiki/List_of_venture_capital_companies_in_India
3. www.entrepreneur.com/businessplan
4. economictimes.indiatimes.com

Pedagogy

- Some students who take admission for the course may not be from management background. So they need to give complete introduction of the subject. Basic things, concepts need to be taught.
- Business Management students will get to know about topics such as Entrepreneurship development, Types of Entrepreneurship, Entrepreneur project development & business plan, venture development & small scale industries which will be develop student's skills about entrepreneurship.
- Practice through question & answer sessions within classroom & homework assignments.
- Practical possibility of any business ideas will be discussed in classrooms through debate sessions.
- Also various business venture & entrepreneurial skills videos will be shown on projector to students.

MOOC Links :

<https://www.udemy.com/courses/business/entrepreneurship/>

Accounting for Managerial Decisions

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Analysis and Interpretation of Financial statements	15	3
2	Ratio analysis and Interpretation	15	
3	Cash flow statement	15	
4	Working capital and Budgetary control	15	
Total		60	

SN	Objectives
1	To acquaint management learners with basic accounting fundamentals.
2	To develop financial analysis skills among learners.
3	The course aims at explaining the core concepts of business finance and its importance in managing a business

Learning Outcomes :

- ✓ Students learn how to apply Analysis techniques to use Financial statements to take decisions for control over costs.
- ✓ Students understand how to manage cashflow, working capital
- ✓ Students understand how to prepare budgets for planning purpose.

Sr. No.	Modules / Units
1	Analysis and Interpretation of Financial statements
	<ul style="list-style-type: none"> • Study of balance sheet of limited companies. Study of Manufacturing, Trading, Profit and Loss A/c of Limited Companies • Vertical Form of Balance Sheet and Profit & Loss A/c- Trend Analysis, Comparative Statement & Common Size.
2	Ratio analysis and Interpretation
	<ul style="list-style-type: none"> • Ratio analysis and Interpretation(based on vertical form of financial statements)including conventional and functional classification restricted to: • Balance sheet ratios: Current ratio, Liquid Ratio, Stock Working capital ratio, Proprietary ratio, Debt Equity Ratio, Capital Gearing Ratio. • Revenue statement ratios: Gross profit ratio, Expenses ratio, Operating ratio, Net profit ratio, Net Operating Profit Ratio, Stock turnover Ratio, Debtors Turnover , Creditors Turnover Ratio • Combined ratios: Return on capital Employed (including Long term borrowings), Return on Proprietors fund (Shareholder fund and Preference Capital), Return on Equity Capital, Dividend Payout Ratio, Debt Service Ratio, • Different modes of expressing ratios:-Rate, Ratio, Percentage, Number. Limitations of the use of Ratios.
3	Cash flow statement
	Preparation of cash flow statement(AccountingStandard-3(revised))
4	Working capital and Budgetary Control
	<ul style="list-style-type: none"> • Working capital-Concept, Estimation of requirements in case of Trading & Manufacturing Organizations. • Receivables management-Meaning & Importance, Credit Policy Variables, methods of Credit Evaluation(Traditional and Numerical- Credit Scoring); Monitoring the Debtors Techniques [DSO, Ageing Schedule] <ul style="list-style-type: none"> • Budgeting and Budgetary Control: <ul style="list-style-type: none"> (a) Budgetary Control and Preparation of Functional and Master Budgeting (b) Fixed, Variable, Semi-Variable Budgets (c) Zero Based Budgeting (ZBB)

Justification : For Decision making and Planning business activities, preparation of Budgets at different capacity levels play a vital role.

Job oriented topics :

Vertical financial statements, Ratio Analysis, Working capital Management, Cash flow Analysis, Budgetary Control

Learner space : Students are given assignment to read the Financial reports published at financial year end. Assignment is given to work actually with practical examples.

Students are asked to go through the Audited financial statements of the prominent sector companies and do analysis, calculate ratios. Students are asked to calculate working capital requirement of small business units. Students are asked to prepare weekly, monthly budgets of small units .

Recommended Reference books :

- Srivastava R M, Essentials of Business Finance, Himalaya Publications
2. Anthony R N and Reece JS. Accounting Principles , Hoomwood Illinos , Richard D. Irvin
3. Bhattacharya SK and Dearden J. - Accounting for Management. Text and Cases , New Delhi.
4. Hingorani NL and ramanathan AR - Management Accounting , New Delhi
5. Ravi M. Kishore , Advanced management Accounting , Taxmann , NewDelhi
6. Maheshwari SN - Management and Cost Accounting , Sultan Chand , New Delhi
7. Gupta , SP - Management Accounting , Sahitya Bhawan , Agra .
Asthana, D. K., and Asthana, Meera,

ICT Back up :

<https://www.educba.com/ratio-analysis-formula/>
https://www.investopedia.com/terms/v/vertical_analysis.asp
<https://taulia.com/glossary/what-is-working-capital-management/>
<https://www.yourarticlelibrary.com/organization/budgetary-control/>

Universities referred while recommending syllabus in Fresh Autonomy :

Indira Gandhi Open University
Savitribai Phule University, Pune
Symbiosis, Pune
NMIMS Mumbai

Pedagogy :

1. Students are encouraged to work in CA firm or help in Accounts writing for small scale units.
2. Students are asked to learn Tally and other financial system maintenance process, Advanced excel, GST related course
3. Assignment of News paper financial progress reports of companies published to be summarised with more details of the sector.
4. Through financial planning at home front students are given practical aspects of the decision making in regard to financial matters.

MOOC Links :

<https://www.edx.org/course/management-accounting>

<https://www.edx.org/course/accounting-essentials>

<https://www.edx.org/course/intermediate-management-accounting-2>

Strategic Management

Modules at glance:

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>	<u>Credit points</u>
1.	Introduction	12	3
2.	Strategy Formulation	16	
3.	Strategic Implementation	18	
4.	Strategic Evaluation & Control	14	

Proposed syllabus

	<u>Modules/Units</u>	<u>Lectures</u> <u>(60)</u>
UNIT-I	Introduction <ul style="list-style-type: none"> • Business Policy-Meaning, Nature, Importance • Strategy-Meaning, Definition • Strategic Management-Meaning, Definition, Importance, Strategic management • Process & Levels of Strategy and Concept and importance of Strategic Business Units (SBU's) • Strategic Intent-Mission, Vision, Goals, Objective, Plans • Core Competencies of Business 	15
UNIT-II	Strategy Formulation <ul style="list-style-type: none"> • Environment Analysis and Scanning(SWOT) • Corporate Level Strategy (Stability, Growth, Retrenchment, Integration and Internationalization) • Business Level Strategy(Cost Leadership, Differentiation, Focus) • Functional Level Strategy(R&D, HR, Finance, Marketing, Production) 	15
UNIT-III	Strategic Implementation <ul style="list-style-type: none"> • Models of Strategy making. • Strategic Analysis& Choices &Implementation: BCG Matrix, GE 9Cell, Porter5 Forces, 7S Frame Work • Implementation: Meaning, Steps and implementation at Project, Process, Structural ,Behavioural ,Functional level • Reasons for Strategy Failure and Methods to Overcome 	18
UNIT-IV	Strategic Evaluation & Control – Meaning, Steps of Evaluation & Techniques of Control Synergy: Concept , Types , evaluation of Synergy. Synergy as a Component of Strategy & its Relevance. Change Management– Elementary Concept Recent Trends in Strategic Management – Blue and Red Ocean Strategy	12

Justification

- A topic “Core competencies of Business” is added to make the students to know the role of core competencies while formulating strategy.
- ‘Reasons for Strategy Failure and Methods to Overcome’ needs to be known by students to see the other side of strategic management.
- Recent Trends in Strategic Management is added to provide current knowledge & change Management is removed as it will be there in recent trends.

Learning Outcomes:

On completion of this course, students will be able to:

1. Understand the strategic decisions that organisations make and have an ability to engage in strategic planning.
2. Explain the basic concepts, principles and practices associated with strategy formulation and implementation.
3. Integrate and apply knowledge gained in basic courses to the formulation and implementation of strategy from holistic and multi-functional perspectives.
4. Analyze and evaluate critically real life company situations and develop creative solutions, using a strategic management perspective.
5. Conduct and present a credible business analysis in a team setting.
6. Students will learn the management policies and strategies at every Level to develop conceptual skills.

Learner space

- Case studies can be given to students which will give practical insight of topics.
- Assignment topics can be asked on critical evaluation of different firms.

Job oriented topics

- As such no individual topic is there which alone can facilitate in job acquisition but whole syllabus is very much important to become successful in any field of Career
- **Strategy Formulation , Strategic Implementation , Strategic Evaluation & Control**

Recommended References Books:

1. Kazmi Azhar: Business Policy & Strategic Management, Tata McGraw Hill.
2. P.K. Ghosh : Business Policy , Strategy , Planning and Management
3. Christensen , Andrews Dower: Business Policy- Text and Cases
4. William F. Gkycj : Business Policy – Strategy Formation and Management Action
5. Bongee and Coloman : Concept of Corporate Strategy
6. Hill, C. W. L. & Jones, G. R. 2008. Strategic Management: An integrated approach, 8th Edition,
7. Houghton Mifflin. Bartlett, C. A. and Ghoshal, S. 1994. Changing the role of top management: Beyond strategy to purpose. Harvard Business Review. November-December: 70-88.
8. Porter, M. E. 1996. What is strategy? Harvard Business Review 74 (6):61-78.
9. Powell, T. C. 2003. Varieties of competitive parities. Strategic Management Journal, 24(1):61-86.

Recommended ICT Backup:-

- <https://www.youtube.com/watch?v=eOFgekOF9ZI>
- <https://www.youtube.com/watch?v=d2GoZDOXzzw>
- <https://www.youtube.com/watch?v=Dfp23xSqpdK>
- <https://www.youtube.com/watch?v=gNR49lk5dS0>
- <https://www.smartinsights.com/marketing-planning/marketing-models/use-bcg-matrix/>
- <https://www.business-to-you.com/ge-mckinsey-matrix/>

Universities which were referred to modify syllabi in fresh autonomy.

- Sikkim & Manipal University
- DDCE, Utkal University, Bhubneshwar.

Pedagogy:

The course emphasizes the value and process of strategic management. In addition to familiarizing students with new subject matter, students are expected to integrate and apply their prior learning to strategic decision making in organisations. Class activities will include lectures and in-class exercises such as cases, team discussions, student report-backs and student presentations of projects

MOOC Links :

<https://www.classcentral.com/course/strategic-management-4279>

<https://www.edx.org/new/course/strategic-management>

SYBMS Semester IV

<u>Course code</u>	<u>SEM IV</u>	<u>Credit points</u>
	<u>Elective courses :</u>	
	<u>Finance</u>	
PUCMSI V22-431	1. Financial Institutions & Markets	3
PUCMSI V22-432	2. Auditing	3
	<u>Marketing</u>	
PUCMSI V22-433	3. Rural Marketing	3
PUCMSI V22-434	4. Tourism Marketing	3
	<u>Human Resource</u>	
PUCMSI V22-435	5. Training & Development in HRM	3
PUCMSI V22-436	6. Change Management	3
	<u>Compulsory courses</u>	
PUCMSI V22-437	7. Information Technology in Business Management II	3
PUCMSI V22-438	8. Fondation Course IV (Ethics and Governance)	2
PUCMSI V22-439	9. Business Economics	3
PUCMSI V22-430	10. Business Research Methods	3
PUCMSI V22-411	11. Production and Total Quality Management	3
	Total Credits	20

Electives : Finance : Financial Institutions and Markets

Modules at a Glance

Total credits : 3

Sr. No.		No. of Lectures	Credit Points
1	Financial System in India	15	3
2	Financial Regulators & Institutions in India (detail discussion on their role and functions)	15	
3	Financial Markets (In Details)	15	
4	Managing Financial Systems Design	15	
Total		60	

Objectives

SN	Objectives
1	The Course aims at providing the students basic knowledge about the structure, role and functioning of financial institutions and markets in the financial system in India.
2	To inculcate understanding relating to managing of financial system

Learning outcomes :

- Learn about financial institutions which play a very vital role in the financial system of the country.
- Understand the Regulatory bodies having control over the financial system.
- Gain knowledge of Financial markets and its working .

Sr. No.	Modules / Units
1	Financial System in India
	<ul style="list-style-type: none"> • Financial System Theoretical Settings – Meaning, Importance, Functions of financial system, Indian financial system from financial neutrality to financial activism and from financial volatility to financial stability. Role of government in Financial development , Phases of Indian financial system since independence (State Domination – 1947-1990, Financial sector reforms 1991 till Financial sector Legislative Reforms Commission 2013) (Only an Overview) Monitoring Framework for financial Conglomerates, • Structure of Indian financial system – Financial Institutions (Banking & Non-Banking), Financial Markets (Organized and Unorganized) Financial Assets/Instruments, Financial Services(Fund based & Free Based) – (In details) • Microfinance - Conceptual Framework – Origin, Definitions, Advantages, Barriers, Microfinance Models in India • National Centre for Financial Education ; National Strategy for Financial Education (2020-2025)
2	Financial Regulators & Institutions in India (detail discussion on their role and functions)
	<ul style="list-style-type: none"> • Financial Regulators – Ministry of Finance (Dept of DEA, Expenditure ,Revenue, financial services and disinvestment) RBI- Changing role of RBI in the financial sector, global crisis and RBI, Ministry of Corporate Affairs, SEBI, Pension Fund Regulatory and Development Authority, IRDA. • Financial Institutions- Role, Classification, Role of Commercial banks, IFCI, IDBI, Industrial Credit and Investment Corporation of India, SFC, Investment institutions in India (LIC, GIC) NBFC services provided by NBFC. • Specialized Financial Institutions – EXIM, NABARD, SIDBI, NHB, SIDC, SME Rating agency of India Ltd, IIFCL, IWRFC (Their role, functions and area of concerns)
3	Financial Markets (In Details)
	<ul style="list-style-type: none"> • Indian Money Market – Meaning, Features, Functions, Importance, Defects, Participants, Components (Organized and Unorganized) (in details) and Reforms • Indian Capital Market - Meaning, Features, Functions, Importance, Participants, Instruments, Reforms in Primary and Secondary Market, Stock Indices, NSE, BSE, ADR and GDR • Introduction of Commodity and Derivative Markets • Insurance and Mutual funds – An introduction
4	Current Developments in Financial sector :

	<ul style="list-style-type: none"> • India Post Payment Bank Ltd. • Privatisation of Banks • Privatisation of Insurance sector • Merger of Public Sector Banks • Advanced Technology that changed the face and scope of Financial system. • At global level – Financial system designs of Developed countries (Japan, Germany , UK and USA) (Brief Summary) <p>Case studies relating to disinvestments policies of PSU in India, Global crises and failures in market systems around world</p>

Justification : Students must know the current developments in the Financial world of the country.

Job oriented topics :

Indian Banking and Insurance sector, Indian Financial Markets, Indian Financial Institutions , Current developments

Learner Space :

Students are given group activity to present in group each financial sector like banking, Insurance, Regulatory bodies. Assignments are given to collect information on latest Government Rules, regulations and any new scheme launched. Students are encouraged to get on job training working in CA firm / Investment consultancy/ do internship.

Reference Books :

Financial Institutions & Markets 1. M. Bhole, Financial Institutions and Markets, TATA McGraw Hill

2. V. A. Avadhani, Marketing of Financial Services, Himalaya Publishers, Mumbai 3. Vasant Desai, Indian Financial Systems, Himalaya Publishers

4. Gordon and Natarajan, Financial Services, Himalaya Publishers

5. Meir Khan, Financial Institutions and Markets, Oxford Press

6. Financial Markets and Institutions-Dr. S. Gurusamy,Tata McGraw Hill.

7. The Indian Financial System-Dr. Bharti Pathak, Pearson.

ICT Back up :

https://en.wikipedia.org/wiki/Indian_stock_exchange

https://en.wikipedia.org/wiki/Category:Stock_exchanges_in_India

https://en.wikipedia.org/wiki/OTC_Exchange_of_India

https://en.wikipedia.org/wiki/List_of_regulators_in_India

Universities referred while recommending syllabus in Fresh Autonomy :

Indira Gandhi Open University

Savitribai Phule University, Pune

Symbiosis, Pune

National Institute of Financial markets

Pedagogy :

1. Students are asked to visit various websites of the organisations they are learning in syllabus.
2. Students are asked to present the information they have collected through presentations.
3. Assignment is given to collect News related to the subject contents and write summery about it.
4. Field visits to the nearby bank and insurance company , Share broker firm.
5. Assignment is given to collect pamphlets/ brochures from the banks giving information of its services.
6. Assignment is given to get the forms for opening an account in a bank,to know KYC formalities
7. Role Playing activity is undertaken giving them chance and idea what questions general public have and what can be the answers to those queries.
8. Students are asked to get the list of listed companies having higher market value in the share market , companies declaring IPO

MOOC Links :

<https://www.edx.org/course/fundamentals-of-market-structure>

<https://www.edx.org/professional-certificate/nyif-capital-markets>

Electives : Finance : AUDITING

Modules at a Glance

Sr. No	Modules No.	No. . of Lectures	Credit Points
1	Introduction to Auditing	15	3
2	Audit Planning, Procedures and Documentation	15	
3	Auditing Techniques and Internal Audit Introduction	15	
4	Auditing Techniques: Vouching & Verification	15	

Objective

1. To enable students get acquaint with the various concepts of auditing.
2. Be acquainted with the general terminology of the Auditing
3. To ensure students understand and practice the various techniques of auditing while managing their finances
4. Processes and evolving the new strategies during upcoming era.

Total No of Credit point 3

Sr. No	Modules / Units	Lecture (60)
1.	<u>Introduction to Auditing</u> <ul style="list-style-type: none">• Basics – Financial Statements, Users of Information, Definition of Auditing, Objectives of Auditing – Primary and Secondary, Expression of opinion, Detection of Frauds and Errors, Inherent limitations of Audit. Difference between Accounting and Auditing, Investigation and Auditing.• Errors & Frauds – Definitions, Reasons and Circumstances, Types of Error – Commission, Omission, Compensating error. Types of frauds, Risk of fraud and Error in Audit, Auditors Duties and Responsibilities in case of fraud• Principles of Audit – Integrity, Objectivity, Independence, Skills, Competence, Work performed by others, Documentation, Planning, Audi Evidence, Accounting System and Internal Control, Audit Conclusions and Reporting• Types of Audit – Meaning, Advantages, Disadvantages of Balance sheet Audit, Interim Audit, Continuous Audit, Concurrent Audit and Annual Audit	15
2.	<u>Audit Planning, Procedures and Documentation</u> <ul style="list-style-type: none">• Audit Planning – Meaning, Objectives, Factors to be considered, Sources of obtaining information, Discussion with Client, Overall Audit Approach.• Audit Program – Meaning, Factors, Advantages and Disadvantages, Overcoming Disadvantages, Methods of Work , Instruction before commencing	

	<p>Work, Overall Audit Approach</p> <ul style="list-style-type: none"> • Audit Working Papers - Meaning, importance, Factors determining Form and Contents, Main Functions / Importance, Features, Contents of Permanent Audit File, Temporary Audit File, Ownership, Custody, Access of Other Parties to Audit Working Papers, Auditors Lien on Working Papers, Auditors Lien on Client's Books, Practical aspect of audit how to make working paper • Audit Notebook – Meaning, structure, Contents, General Information, Current Information, Importance • Introduction to Audit and Accounting Firm (Deloitte, PwC, EY, KPMG, BDO, RSM, Grant Thornton, Nexia International, Crowe Horwath, Baker Tilly) 	
Sr. No	Modules / Units	Lecture (60)
3.	<p><u>Auditing Techniques and Internal Audit Introduction</u></p> <ul style="list-style-type: none"> • Test Check - Test Checking Vs Routing Checking, test Check meaning, features, factors to be considered, when Test Checks can be used, advantages disadvantages precautions. • Audit Sampling - Audit Sampling, meaning, purpose, factors in determining sample size -Sampling Risk, Tolerable Error and expected error, methods of selecting Sample Items Evaluation of Sample Results auditors Liability in conducting audit based on Sample <ul style="list-style-type: none"> • Internal Control - Meaning and purpose, review of internal control, advantages, auditors duties, review of internal control, Inherent Limitations of Internal control, internal control samples for sales and debtors, purchases and creditors, wages and salaries. Internal Checks Vs Internal Control, Internal Checks Vs Test Checks • Internal Audit - Meaning, basic principles of establishing Internal audit, objectives, evaluation of internal Audit by statutory auditor, usefulness of Internal Audit, Internal Audit Vs External Audit, concept of Forensic Accounting in practical aspect 	15
4.	<p><u>Auditing Techniques: Vouching & Verification</u></p> <ul style="list-style-type: none"> • Audit of Income - Cash Sales, Sales on Approval, Consignment Sales, Sales Returns Recovery of Bad Debts written off, Rental Receipts, Interest and Dividends Received Royalties Received • Audit of Expenditure - Purchases, Purchase Returns, Salaries and Wages, Rent, Insurance Premium, Telephone expense Postage and Courier, Petty Cash Expenses, Travelling Commission Advertisement, Interest Expense • Audit of Assets Book Debts / Debtors, Stocks -Auditors General Duties; Patterns, Dies and Loose Tools, Spare Parts, Empties and Containers Quoted Investments and Unquoted Investment Trade Marks / Copyrights Patents Know-How Plant and Machinery Land and Buildings Furniture and Fixtures • Audit of Liabilities - Outstanding Expenses, Bills Payable Secured loans Unsecured Loans, Contingent Liabilities 	

Justification:-

Student must know the Practical aspect and basic concept which may useful for carrier oriented

Learning Outcome:-

1. Student Learn General Purpose of Auditing
2. They understood how to work in Audit Field
3. Enhance Strategies among the Student

Job Oriented Skill Development Topics:-

1. Introduction to Auditing firm
2. Forensic Accounting
3. Audit Technique

Leaner Space:-

1. Encourage Student to Work in Broking Firm (Angel/ Motiala Oswal / Sherkhan and much more) to get actual practical Experience. After college over all Lecture hour done)
2. Suggest student to learn to open Demat account
3. Inform to Student must go through annual Report of the Blue chip Company

Recommended Reference Book:

Allen, Larry (1750-2000). The Global Financial System.
Ian H. Giddy (1994). Global Financial Markets. Houghton Mifflin.
Saunders, Anthony & Cornett, Marica Millon. Financial markets & institutions: A modern perspective: TMIT
LM Bhole. Financial institutions & markets: Structure, growth & innovations. TMH (5th ed.)
Chandra, P. (2011).Corporate Valuation and Value Creation, (1st ed).
The Intelligent Investor by Benjamin Graham
Bond Markets, Analysis, and Strategies (7th Edition)

Recommended ICT backup

<https://www.bseindia.com>
<https://www.nseindia.com/>
<https://www.dsij.in/>
<https://wall-street.com/>

Pedagogy : Discussion over the Audit Reports with reference to the Annual Reports of the company, Actual visit to the Audit firm, Interaction with Audit team members

MOOC Links :

<https://www.edx.org/course/network-security-2?index=product&queryID=255f0e1340dde9342a39ad3a89742b54&position=1>

Electives : Marketing : Rural Marketing

Modules at glance:

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures Total 60.</u>	<u>Credit points</u>
1.	Introduction	15	3
2.	Rural Market	15	
3.	Rural Marketing Mix	15	
4.	Rural Marketing Strategies	15	

Proposed syllabus

	Modules/Units	Lectures (60)
UNIT-I	Introduction <ul style="list-style-type: none">• Introduction to Rural Market, Definition & Scope of Rural Marketing.• Rural Market in India-Size & Scope, Rural development as a core area, Efforts put for Rural development by government (A brief Overview).• Emerging Profile of Rural Markets in India,• Problems of rural market.• Constraints in Rural Marketing and Strategies to overcome constraints	15
UNIT-II	Rural Market <ul style="list-style-type: none">• Rural Consumer Vs Urban Consumers– a comparison.• Characteristics of Rural Consumers.• Rural Market Environment: a) Demographics– Population, Occupation Pattern, Literacy Level; b) Economic Factors-Income Generation, Expenditure Pattern, Rural Demand and Consumption Pattern, Rural Market Index; Land Use Pattern, c) Rural Infrastructure -Rural Housing, Electrification, Roads• Rural Consumer Behaviour: meaning, Factors affecting Rural Consumer Behaviour-Social factors, Cultural factors, Technological factors, Lifestyle, Personality	15
UNIT-III	Rural Marketing Mix <ul style="list-style-type: none">• Relevance of Marketing mix for Rural market/Consumers.• Product Strategies, Rural Product Categories-FMCGs, Consumer Durables, Agriculture Goods & Services; Importance of Branding, Packaging and Labelling.• Nature of Competition in Rural Markets, the problem of Fake Brands• Promotional Strategies. Segmentation, Targeting & Positioning for rural market	18

	•Principles of Innovation for Rural Market,	
UNIT-IV	Rural Marketing Strategies • Distribution Strategies for Rural consumers. Channels of Distribution- HAATS, Mandis, Public Distribution System, Cooperative society, Distribution Models of FMCG, Companies HUL, ITC etc. Distribution networks, Ideal distribution model for rural markets (Case study based) • Communication Strategy. Challenges in Rural Communication, Developing Effective Communication, Determining Communication Objectives, Designing the Message, Selecting the Communication Channels. Creating Advertisements for Rural Audiences. Rural Media- Mass media, Non-Conventional Media, Personalized media •Rural marketing of financial services •Digitalizing the Indian rural markets-e-rural marketing	12

Justification

- A topic “Principles of Innovation for Rural Market” is added to make the students to use their creativity & imagination .
- As pricing Strategies& objectives are already there in 2nd Semester Principles of Marketing so it is removed.
- By keeping in the mind the importance of Financial Services & Digitalizing, these topics are added.

Job oriented topics : Rural consumer Behaviour, Promotional strategies , Rural Markets, Rural media , Marketing Mix

Learning Outcomes:

On completion of this course, students will be able:

- To develop an insight into rural marketing regarding different concepts and basic practices in this area.
- To discuss the challenges and opportunities in the field of rural marketing.
- To explore the Agriculture and Rural Marketing environment so that they can understand consumer's and marketing characteristics of the same for understanding and contributing to the emerging challenges in the upcoming global economic scenario.
- To familiarize with the special problems related to sales in rural markets,
- To identify challenges and opportunities in rural marketing
- To get exposure to the rural marketing environment and rural markets

Learner space

- Case studies can be given to students which will give practical insight of topics.
- Mini research projects can be given to analyze the current rural marketing.

Recommended References Books:

1. Badi & Badi : Rural Marketing
2. Mamoria, C.B. & Badri Vishal : Agriculture problems in India
3. Arora, R.C. : Integrated Rural Development
4. Rajgopal : Managing Rural Business
5. Gopalaswamy, T.P. : Rural Marketing
5. Balaram Dogra & Karminder Ghuman, RURAL MARKETING: CONCEPT & CASES, Tata McGraw-Hill Publishing Company, New Delhi, 2008
6. A.K. Singh & S. Pandey, RURAL MARKETING: INDIAN PERSPECTIVE, New Age International Publishers, 2007
7. CSG Krishnamacharylu & Laitha Ramakrishna, - RURAL MARKETING, Pearson Education Asia. 2009

8. Recommended ICT Backup:-

- <https://www.youtube.com/watch?v=JzdBa3NsNLA>
- <https://www.youtube.com/watch?v=YgjuI6pcrHI>
- <https://www.yourarticlelibrary.com/marketing/rural-marketing/rural-marketing-introduction-concept-and-definitions/48725>
- <https://businessjargons.com/rural-marketing.html>
- <https://www.marketing91.com/rural-marketing/>

Universities which were referred to modify syllabi in fresh autonomy.

- Sikkim & Manipal University
- Visvesvaraya Technological University, Belagavi, Karnataka
- Pondicherry University
- Gujarat Technological University
- Lovely Professional University, Punjab

Pedagogy:

The programme is cast in the background of facets pertaining to rural marketing. Application of concepts and frameworks will be through Case Analysis, discussions, exercises and lectures.

MOOC Links :

<https://www.edx.org/course/e-commerce-logistics-and-last-mile>

Electives : Marketing

Tourism Marketing

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Introduction to Tourism Marketing	15	3
2	Tourism Market Segmentation & Product Mix of Tourism Marketing	15	
3	Concept of Pricing, Place, Promotion and Expanded marketing mix for tourism marketing	15	
4	Global tourism, tourism organizations and Challenges for Indian Tourism Industry	15	
Total		60	

SN	Objectives
1	To understand basic concepts and strategies of Tourism Marketing.
2	To impart knowledge to learners about types of tourism.
3	To understand segmentation and Marketing mix in the context of Tourism Marketing.
4	To familiarize learners with trends and challenges in Tourism Marketing.

Sr. No.	Modules / Units
1	Introduction to Tourism Marketing <ul style="list-style-type: none"> • Meaning of Tourism & Tourist, Features of Tourism, Purpose of Tourism, Adverse Effects of Tourism, Factors Influencing growth of Tourism, Classification of Tourism; Types of Tourism: Health, adventure, rural, cultural, religious, eco-Tourism, wedding Tourism, cruise Tourism, food tourism, film tourism, travel bloggers • Tourism Marketing Meaning, Objectives of Tourism Marketing, Importance of Tourism Marketing, Problems of Tourism Marketing. • Phases of Tourism: Economic Approach, Environmental Approach, Cost Benefit Approach. • Tourism Planning: Process, Study of market, Levels of tourism planning, Organization of a tour. Tour Operators and Travel Agents: functions, types, distribution network, Travel agency operations, Travel Organization-Individual and group, travel itinerary. Travel Formalities and Documentation. Push and pull factor in tourism
2	Tourism Market Segmentation & Product Mix of Tourism Marketing <ul style="list-style-type: none"> • Tourism Market Segmentation: Meaning, Need for Market Segmentation in Tourism Importance of Market Segmentation in Tourism Bases for Segmentation in Tourism Tourist Typology: Cohens Typology, Plog's Typology • 4 'A's of Tourism Attraction: Meaning, Typology of Attraction, Natural, Artificial, Cultural, Social, Managed Attraction for Tourist, Peter's Inventory of Tourist Accommodation: Meaning, Typology of Accommodation Accessibility: Meaning, Transportation System for Tourism, Surface Transport, Railways and its contribution to tourism, Sea & Waterways, Airways Amenities: Meaning, Amenities & Facilities at the destination. • Marketing Strategy: Hard v/s Soft Tourism Strategy. • Product Mix of Tourism Marketing: Meaning, Tourism Destination Life Cycle, Factors for tourism destination selection, launching a new tourism product, Tourism Product and Package Tour, Itinerary meaning, Types of Itinerary, Drawing a Itinerary for Tourist, Reservation meaning, Sources of reservation, Modes of Reservation, Ticketing Procedure
3	Concept of Pricing, Place, Promotion and Expanded marketing mix for tourism marketing

		<ul style="list-style-type: none"> • Price: Meaning, Factors Influencing Tourism Pricing, Tourism Pricing Objectives, Tourism Pricing Policies • Place: Meaning, Factors Influencing Tourism Distribution, Tourism Distribution System, Middlemen in Tourism Industry, Functions of Middlemen, Travel Guide Meaning, Essential of an ideal travelguide. • Promotion: Tourism Advertising, Tourism Publicity, Tourism Public Relation, Tourism Sales promotion Technique, Personal Selling in Tourism, Skills required for Selling Tourism Product, Electronics Channel of Tourism • People: Moment of Truth in Tourism, Employee as an element of people mix, Internal Marketing, Objectives of Internal Marketing, Internal marketing Process. • Process: Meaning, Factors to be considered while designing the service process, Tourism Service Blueprinting: Meaning, Steps, Benefits of Blueprinting • Physical Evidence for Tourism
4	Global Tourism, Tourism Organizations and Challenges for Indian Tourism Industry	
	<ul style="list-style-type: none"> • Global Tourism Market: Overview of Tourism Market of America, Mauritius, Asia Pacific, Thailand, Vietnam, China, Singapore, Middle East and Gulf, UK and other European Countries. • Status of tourism in developing countries. • India as a Tourist Destination: A conceptual framework, Destination Image, Building Brand India; Incredible India Campaign • Challenges for Indian Tourism Industry. • Tourism Organizations: World Trade Organization (WTO), International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), Pacific Asia Travel Association (PATA), Universal Federation of Travel Agents Association (UFTAA), Travel Agents Association of India(TAAI), Indian Association of Tour Operators(IATO), Ministry of Tourism, Government of India, India Tourism Development Corporation. • Careers in Tourism industry. • Code of Conduct for safe and sustainable Tourism for India 	

Learning outcomes.

The basic idea to study this subject is to understand the value and significance of tourism industry in today scenario in terms of income generation for the individual and earn the reputation and goodwill all around the world.

Learner space

This subject analysis the provide the information relation to the value and importance of tourism in india as well as in global scenario. This subject provide the basic idea towards the development and role of tourism in developing nation economy.

Job oriented topics :

Global Tourism, Challenges in Indian Tourism industry, Tourism marketing, Tourism Planning, careers in Tourism marketing

Justification

I have added some new topics which initiates the strategy which encourages to achieve and growth and development in tourism industry. Some career options information is also provided which initiates the idea to grab job opportunity and provide some portion of monetary aspects for building the nation economy growth.

Recommended References Books:

1. S.M.Jha, Tourism Marketing, Himalaya Publishing House, Second Edition, 2011
2. Prasanna Kumar, Marketing of Hospitality and Tourism Services, Tata McGraw Hill, 2010
3. Kshitiz Sharma, Introduction to Tourism Management, McGraw Hill Education (India) Pvt. Ltd, 2014
4. Sunil Kabia, , Tourism and the developing countries, Mohit Publications, First edition, 2005
5. M.V.Kulkarni, Tourism marketing, Everest Publishing House, First edition, 2005
6. Alan A. Lew, A companion to tourism, Blackwell Publishing
7. Krishnan K Kamra, Tourism: An Overview

Recommended ICT Backup:-

- [https://www.ukessays.com/essays/tourism/push-and-pull-factor-in-tourism-tourism-essay.php#:~:text=Push%20factors%20are%20defined%20as,destination%20\(Gnoth%2C%201997\).](https://www.ukessays.com/essays/tourism/push-and-pull-factor-in-tourism-tourism-essay.php#:~:text=Push%20factors%20are%20defined%20as,destination%20(Gnoth%2C%201997).)
- <https://www.mastersportal.com/articles/582/what-can-i-become-if-i-study-tourism-and-hospitality-at-an-international-university.html>

Universities which were referred to modify syllabi in fresh autonomy.

- Sikkim university.
- Savitribai phule pune university

Pedagogy:-

Students can do presentation and take the topics on cities and other famous places and initiates the importance of tourism in day to day life in terms of generation of income and get information related to the places existing within and outside india.

Eminent experts and tour operators can provide guest lectures and convey the scope of tourism in today's scenario.

MOOC Links :

1.<https://www.edx.org/course/tourism-and-travel-management-course-v1uqxtourismx1t2021>

<https://www.edx.org/course/managing-human-resources-in-the-hospitality-and-tourism-industry-course-v1hkpolyuxhtm533x1t2022>

Electives : Human Resource

Training and Development in HRM

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Overview of Training	15	3
2	Overview of development	15	
3	Concept of Management development	15	
4	Performance measurement, Talent management & Knowledge management	15	
Total			60

Objectives

SN	Objectives
1	This paper is not pure academic oriented but practice based. It has been designed, keeping in view the needs of the organizations. Successful managerial performance depends on the individual's ability to observe, interpret the issues and modify his approach and behaviour. All organizations need to pay adequate attention to equip their employees. Rapid progress in technology has changed not only in the physical facilities but also in the abstract qualities required of the men who are using them. This paper will attempt to orient the students to tailor themselves to meet the specific needs of the organizations in training and development activities.

Sr. No.	Modules / Units
1	Overview of Training
	<ul style="list-style-type: none"> • Overview of training– concept, scope, importance, objectives, features, need and assessment of training. • Process of Training–Steps in Training, identification of Job Competencies, criteria for identifying Training Needs (Person Analysis, Task Analysis, Organisation Analysis), Types–On the Job &Off the Job Method. • Assessment of Training Needs, Methods & Process of Needs Assessment. • Criteria &designing-Implementation– an effective training program.
2	Overview of Development
	<ul style="list-style-type: none"> • Overview of development– concept, scope, importance & need and features, Human Performance Improvement • Counseling techniques with reference to development employees, society and organization. • Career development– Career development cycle, model for planned self development, succession planning.
3	Concept of Management Development
	<ul style="list-style-type: none"> • Concept of Management Development. • Process of MDP. • Programs &methods, importance, evaluating a MDP. • PDP- personality development programme, evaluation of PDP sessions,
4	Performance measurement, Talent management & Knowledge management
	<ul style="list-style-type: none"> • Performance measurements– Appraisals, pitfalls &ethics of appraisal. • Talent management –Introduction ,Measuring Talent Management, Integration & future of TM, Global TM &knowledge management— OVERVIEW -Introduction: History, Concepts, • Knowledge Management: Definitions and the Antecedents of KM Information Management to Knowledge Management , Knowledge Management: What Is and What Is Not?, Three stages of KM, KM Life Cycle

Learning Outcomes

The basic idea is to learn this subject which point out the course of practicing the work culture in organization. This subject putn light on the activites to be learned and carryout for performing and practicing role and duties by the employees by which they are hired in the job. This subject provide the knowledge of how to perform task in a efficient way.

Learner space

This subject focus on the activities to be conducted after the recruitment and selection of an applicant is done in organization and given idea how to perform the duties which is allotted to him or her in an efficient way. This subject focus on how to transform the learner in to the perfect employees while conducting training and development session through on the job and off the job scenario.

Job oriented topics

- Counseling techniques with reference to development employees, society and organization.
- Performance measurements– Appraisals, pitfalls ðics of appraisal.
- Talent management –Introduction ,Measuring Talent Management,
- Knowledge Management
 - Training and development activity is an essential aspect for every candidate who is newly joined or allotted new duties and responsibilities to those who will practice the job in near future.
 - Thus training and development aspect will remain forever in every firm and concern and need to learn for the betterment of every candidate who perform work task in organization or for self employment.

Justification

I have added some new topics which is very essential for the new and fresh applicants to inculcate in themselves which help them to perform the task confidently. such new added topics ensure them to build good personality and create their good image in the mind of employers and colleagues which he or she have to work under one roof for the betterment of the organization .

Reference books:-

1. Brinkerhoff, Robert, .Achieving Results from Training How to evaluate HRD to Strengthen programs and Increase impact. 1987, Jossey bass, San Francisco.
2. Craig, Robert L. Training and Development Handbook. , 3rd ed. 1987. McGraw Hill, New York
3. Employee Training And Development - Raymond Noe
4. Every Trainers Handbook- Devendra Agochia
5. 360 Degree Feedback, Competency Mapping And Assessment Centre- Radha Sharma
6. Training And Development- S.K. Bhatia.

Recommended ICT Backup:-

- https://www.mindtools.com/pages/article/newCDV_72.htm#:~:text=Mentoring%20is%20a%20relationship%20between,person%2C%20or%20%22mentee.%22
- <http://aahpmblog.org/articles/what-is-the-difference-between-coaching-mentoring-counseling-training-and-managing/#:~:text=Mentoring%20has%20a%20broader%20focus,of%20individuals%20and%20their%20relationships.&text=The%20goal%20for%20counseling%20is,%20Dunderstanding%20and%20self%20acceptance.>
- https://compassionit.com/programs/?gclid=CjwKCAjw-sqKBhBjEiwAVaQ9a1ZQTWsk5WWkcyzIKpIsexx5Ng4ZezlGLcfm3SbVqR31G26fnj5b-xoCKD8QAvD_BwE
- https://www.artofliving.org/in-en/personality-development?gclid=CjwKCAjw-sqKBhBjEiwAVaQ9a6isnPwzwHjJpgXJzBG3Lz0UWmSsuXVkBhkMmBUINneYFufb0vBJSRoCjGsQAvD_BwE

Universities which were referred to modify syllabi in fresh autonomy.

- ITS ENGINEERING COLLEGE- GREATER NOIDA.
- SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

Pedagogy:-

- While conducting the lectures, professor can conduct role plays, case study solving session to understand the concept of training and development very efficiently.
- Eminent executives, HR- consultants can deliver the guest lecture on training and development activities practiced in organization which gives the central idea to the students before joining any firm or organization.

MOOC Links :

1. <https://www.edx.org/course/innovation-leadership-course-v1gtxmgt10001t2022>
2. <https://www.edx.org/course/becoming-an-effective-leader-course-v1uqxbuslead1x3t2021>

Electives : Human Resource :

Change Management

Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Introduction	15	3
2	Impact of Change	15	
3	Resistance to Change	15	
4	Effective Implementation of Change	15	
Total			

Objectives

SN	Objectives
1	<ul style="list-style-type: none">• The objective of this paper is to prepare students as organizational change facilitators using the knowledge and techniques of behavioral science.• Support timely and effective implementation of business-required changes.• Appropriately manage risk to the business.• Minimize negative impact of changes to/for the business.• Ensure changes achieve desired business outcomes.

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Sr. No.	Modules / Units
1	Introduction
	<ul style="list-style-type: none"> • Introduction & levels of change. Importance, imperatives of change, Forces of change. Causes-social, economic, technological and organizational. • Organizational culture & change. • Types & Models of change –Kurt Lewin’s change model, Action research, Expanded Process Model., A.J. Leavitts model. • The 7 r’s of Change Management • The 4 principles of Change Management
2	Impact of Change
	<ul style="list-style-type: none"> • Change & its implementation.– individual change: concept, need, importance & risk of not having individual perspective. Team Change –concept, need, importance & limitation • Change & its impact– Resistance to change & sources-sources of individual resistance, sources of organizational resistance
3	Resistance to Change
	<ul style="list-style-type: none"> • Overcoming Resistance to change – Manifestations of resistance, Six box model • Minimizing RTC. • OD Interventions to overcome change-meaning and importance, Team intervention, Role analysis Technique, Coaching & mentoring, T-group, Job expectations technique, Behaviour modification, Managing role stress.
4	Effective implementation of change
	<ul style="list-style-type: none"> • Effective implementation of change–change agents and effective change programs. • Systematic approach to change, client & consultant relationship • Classic skills for leaders • Case study on smart change leaders, caselets on Action research.

	<ul style="list-style-type: none"> • 8 Trends for Next Generation Change Management • The 5 Greatest Examples of Change Management in Business History
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Learning Outcomes

- It will help students develop the skill of understanding and analysing change management and its effect on the organization
- After completion of the course, learners would be able to know variables that comprise and affect change management
- Learn strategies to effectively implement change.
- Develop an understanding of different models and types of change.

Learner space

Students will be given case studies and presentations so that they learn to apply theory to Practical. Also will be suggesting students to take up internship so that they can get practical experience and knowledge of the subjects.

Job oriented topics:

Change & its impact– Resistance to change & sources, Overcoming Resistance to change , Coaching & mentoring, Effective implementation of change

This whole subject will be teaching students to adopt and adjust in the organization so studying this entire subject can make the students ready for the job .

Justification

- students should have knowledge about current trends on the market.
- With reference to case study, students become aware of different issues in corporate world and how they can be handled.

Recommended References Books:

- Organisational Development by French and Bell
- An experiential approach to O.D. by Harvey and Brown
- Consultants and Consulting Styles by Dharani Sinha P.
- Kavita Singh- Organization change
- S.K. Bhatia- Organisational Change-
- K.Ashwathapa- Management & OB, HRM.
- Radha Sharma- Training & Development.

Recommended ICT Backup:-

https://www.mindtools.com/pages/article/newPPM_87.htm

<https://www.imaworldwide.com/blog/8-trends-for-next-generation-change-management>

<https://www.managers.org.uk/knowledge-and-insights/case-study/the-5-greatest-examples-of-change-management-in-business-history/>

Universities which were referred to modify syllabi in fresh autonomy.

- Savitribai Phule University, Pune
- Indira Gandhi Open University (IGNOU)
- Symbiosis International Deemed University, Pune

Pedagogy:

- Faculty will use cases, simulations, projects and videos to achieve learning objectives in the Consumer Behavior Subject.
- Guest lectures – eminent professionals from the industry share their experiences and enable the aspiring students to broaden their vision.

MOOC Links :

<https://www.openlearning.com/courses/organizational-development/?cl=1>

Information Technology in Business Management -II

Modules at Glance

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>	<u>Credit points</u>
<u>1.</u>	Management Information system	15	3
<u>2.</u>	ERP/E-SCM/E-CRM	15	
<u>3.</u>	Introduction to databases and data warehouse	15	
<u>4.</u>	Outsourcing	15	

Objectives of the course:

1. To understand managerial decision-making and to develop perceptive of major functional area of MIS
2. To provide conceptual study of Enterprise Resource Planning, Supply Chain Management, Customer Relationship Management, Key issues in implementation. This module provides understanding about emerging MIS technologies like ERP, CRM, SCM and trends in enterprise applications.
3. To learn and understand relationship between database management and data warehouse approaches , the requirements and applications of data warehouse.
4. To learn outsourcing concepts. BPO/KPO industries, their structures , Cloud computing

<u>Sr No</u>	<u>Modules</u>	<u>No of lectures</u> <u>Total 60.</u>
<u>1.</u>	Overview of MIS Definition, Characteristics <ul style="list-style-type: none">• Subsystems of MIS (Activity and Functional subsystems)• Structure of MIS	<u>10</u>

	<ul style="list-style-type: none"> • Reasons for failure of MIS. • Understanding Major Functional Systems <p>Marketing & Sales Systems Finance & Accounting Systems Manufacturing & Production Systems Human Resource Systems Inventory Systems</p> <ul style="list-style-type: none"> • Sub systems, description and organizational levels • Decision support system <p>Definition Relationship with MIS</p> <ul style="list-style-type: none"> • Evolution of DSS, Characteristics, classification, objectives, components, applications of DSS 	
<u>2.</u>	<p>Concepts of ERP/E-SCM/E-CRM</p> <ul style="list-style-type: none"> • Architecture of ERP <p>Generic modules of ERP</p> <ul style="list-style-type: none"> • Applications of ERP • ERP Implementation concepts <p>ERP lifecycle</p> <ul style="list-style-type: none"> • Concept of XRP (extended ERP) • Features of commercial ERP software <p>Study of SAP, Oracle Apps, MS Dynamics NAV, Peoplesoft</p> <ul style="list-style-type: none"> • Concept of e-CRM <p>E-CRM Solutions and its advantages, How technology helps?</p> <ul style="list-style-type: none"> • CRM Capabilities and customer Life cycle <p>Privacy Issues and CRM</p> <ul style="list-style-type: none"> • Data Mining and CRM <p>CRM and workflow Automation</p> <ul style="list-style-type: none"> • Concept of E-SCM <p>Strategic advantages, benefits</p> <p>E-SCM Components and Chain Architecture</p> <ul style="list-style-type: none"> • Major Trends in e-SCM • Case studies ERP/SCM/CRM <p>CRM Hubspot Software</p>	<u>15</u>
<u>3.</u>	<p>Introduction to DBMS</p> <p>Meaning of DBMS, Need for using DBMS. Concepts of tables, records, attributes, keys, integrity constraints, schema architecture, data independence.</p> <p>DBMS practical applications</p>	

	<p>Practicals of SQL, Creating Table, Modifying Table and learning queries, Functions in SQL, Join and other database related commands</p> <ul style="list-style-type: none"> • Data Warehousing and Data Mining <p>Concepts of Data warehousing, Importance of data warehouse for an organization Characteristics of Data warehouse Functions of Data warehouse Data warehouse architecture Business use of data warehouse Standard Reports and queries</p> <ul style="list-style-type: none"> • Data Mining <p>The scope and the techniques used</p> <ul style="list-style-type: none"> • Business Applications of Data warehousing and Data mining
<u>4.</u>	<p>Introduction to Outsourcing</p> <p>Meaning of Outsourcing, Need for outsourcing Scope of Outsourcing. Outsourcing : IT and Business Processes</p> <ul style="list-style-type: none"> • Business Process Outsourcing (BPO) <p>Introduction</p> <ul style="list-style-type: none"> • BPO Vendors <p>How does BPO Work? BPO Service scope Benefits of BPO BPO and IT Services Project Management approach in BPO BPO and IT-enabled services</p> <ul style="list-style-type: none"> • BPO Business Model <p>Strategy for Business Process Outsourcing Process of BPO ITO Vs BPO</p> <ul style="list-style-type: none"> • BPO to KPO <p>Meaning of KPO KPO vs BPO KPO : Opportunity and Scope KPO challenges KPO Indian Scenario</p> <ul style="list-style-type: none"> • Outsourcing in Cloud Environment <p>Cloud computing offerings</p> <ul style="list-style-type: none"> • Traditional Outsourcing Vs. Cloud Computing

Desired Outcomes:

1. To explain the various Information systems and its major components
2. Learners will gain skill in latest MS-Office software, understand basic concepts of email, Internet and websites, domains and security there in, security aspects of IT in business, highlighting electronic transactions, advanced security features.

JOB ORIENTED TOPICS : • Data Warehousing and Data Mining, BPO and IT-enabled services, Marketing & Sales Systems, Finance & Accounting Systems, Manufacturing & Production Systems, Human Resource Systems, Inventory Systems, DBMS practical applications, Outsourcing in Cloud Environment

LEARNER'S SPACE:

1. Encouraging students to learn free certification course from udemy and IBM.
2. Suggesting students to read news about current Technology.
3. Students are asked to prepare PPT and present the information they have collected through various sources.

RECOMMENDED REFERENCES BOOKS:

7. Information Technology for Management, 6TH ED (With CD) By Efraim Turban, Dorothy Leidner, Ephraim Mclean, James Wetherbe (Ch1, Ch2)
8. Microsoft Office Professional 2013 Step by Step By Beth Melton, Mark Dodge, Echo Swinford, Andrew Couch
9. Tata McGraw Hill Joseph, P.T. : E-commerce An Indian Perspective (Ch-13,Ch-14)
10. Computer Viruses and Related Threats: A Management Guide (Ch-2, Ch-3) By John P. Wack, Lisa J. Carnahan
11. Fundamentals of Computers — Prentice Hall Rajaram V V – Edition
12. Sql The Complete Reference 2nd Ed. Groff James R., Weinbery Paul N. Mc-Graw Hill 2nd 2002
13. Principles of Database Management Martin James. Prentice-Hall 1st 1977

SYLLABI REFERRED FROM:

1. Delhi university
2. Pune university

RECOMMENDED ICT BACKUP:-

6. https://www.tutorialspoint.com/management_information_system/management_information_system.htm
7. <https://www.tutorialspoint.com/sql/sql-rdbms-concepts.htm>
8. <https://www.hubspot.com/>

PEDAGOGY:

1. Encouraging students for team building activities and give a glimpse of the real world.
2. Hands-on practical on Excel, power point and Ms-word.
3. A combination of innovative teaching methods, guest speakers, hands-on experience of new technology.
4. Showing technology related videos.

LIST OF MOOC PROGRAM:

1. Excel for Data Management
2. Digital Marketing Strategy
3. Basic Network and Database Security
4. Structured Query Language

https://www.edx.org/learn/data-mining?hs_analytics_source=referrals&utm_source=mooc.org&utm_medium=referral&utm_campaign=mooc.org-topics
<https://www.edx.org/learn/data-management>

Skill Enhancement Courses

Foundation Course IV : Ethics and Governance Modules at a Glance

Sr. No.		No. of Lectures	Credit points
1	Introduction to Ethics and Business Ethics	12	3
2	Ethics in Marketing, Finance and HRM	11	
3	Corporate Governance	11	
4	Corporate Social Responsibility (CSR)	11	
Total		45	

SN	Objective
1	To understand significance of ethics and ethical practices in businesses which are indispensable for progress of a country
2	To learn the applicability of ethics in functional areas like marketing, finance and human resource management
3	To understand the emerging need and growing importance of good governance and CSR by organizations
4	To study the ethical business practices, CSR and Corporate Governance practiced by various organizations

Sr. No.	Modules / Units
1	Introduction to Ethics and Business Ethics
	<ul style="list-style-type: none"> • Ethics: Concept of Ethics, Evolution of Ethics, Nature of Ethics- Personal, Professional, Managerial Importance of Ethics, Objectives, Scope, Types – Transactional, Participatory and Recognition • Business Ethics: Meaning, Objectives, Purpose and Scope of Business Ethics Towards Society and Stakeholders, Role of Government in Ensuring Business Ethics Principles of Business Ethics, 3 Cs of Business Ethics – Compliance, Contribution and Consequences Myths about Business Ethics Ethical Performance in Businesses in India
2	Ethics in Marketing, Finance and HRM
	<ul style="list-style-type: none"> • Ethics in Marketing: Ethical issues in Marketing Mix, Unethical Marketing Practices in India, Ethical Dilemmas in Marketing, Ethics in Advertising and Types of Unethical Advertisements • Ethics In Finance: Scope of Ethics in Financial Services, Ethics of a Financial Manager – Legal Issues, Balancing Act and Whistle Blower, Ethics in Taxation, Corporate Crime - White Collar Crime and Organized Crime, Major Corporate Scams in India, Role of SEBI in Ensuring Corporate Governance, Cadbury Committee Report, 1992 • Ethics in Human Resource Management: Importance of Workplace Ethics, Guidelines to Promote Workplace Ethics, Importance of Employee Code of Conduct, Ethical Leadership <ul style="list-style-type: none"> • Ethics and Market System • Case study on ethics
3	Corporate Governance
	<ul style="list-style-type: none"> • Concept, History of Corporate Governance in India, Need for Corporate Governance • The 4 P's of Corporate Governance • Significance of Ethics in Corporate Governance, Principles of Corporate Governance, Benefits of Good Governance, Issues in Corporate Governance • Theories- Agency Theory, Shareholder Theory, Stakeholder Theory and Stewardship Theory • Corporate Governance in India, Emerging Trends in Corporate Governance, Models of Corporate Governance, Insider Trading.
4	Corporate Social Responsibility (CSR)

	<ul style="list-style-type: none"> • Meaning of CSR, Evolution of CSR, Types of Social Responsibility • Aspects of CSR- Responsibility, Accountability, Sustainability and Social Contract • Need for CSR • CSR Principles and Strategies • Issues in CSR • Social Accounting • Tata Group's CSR Rating Framework • Ethical Issues in International Business Practices • Recent Guidelines in CSR • Future of CSR
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Learning Outcomes:

- Learners would be able to apply business ethics includes the moral principles and standards that guide behavior in the world of business; corporate social responsibility (CSR) is an integrative management concept, which establishes responsible behavior within a company, its objectives, values and competencies.
- Social responsibility will teach the students for fulfilling their civic duty, and that the actions of an individual must benefit the whole of society.

Learner space:

- Will be giving students case studies of different companies to the students so that they can study success and failure of applying ethics in the corporate world.
- Will also be guiding the students to associate with different NGO and companies to do CSR activities in the college. So that they can get firsthand experience of their theoretical knowledge.

Job oriented topics

- Ethical issues in Marketing Mix, Unethical Marketing Practices in India, Ethical Dilemmas in Marketing, Ethics in Advertising and Types of Unethical Advertisements
- Scope of Ethics in Financial Services, Ethics of a Financial Manager – Legal Issues, Balancing Act and Whistle Blower, Ethics in Taxation, Corporate Crime - White Collar Crime and Organized Crime, Major Corporate Scams in India, Role of SEBI in Ensuring Corporate Governance, Cadbury Committee Report, 1992
- Emerging Trends in Corporate Governance

Justifications

- The topics will enhance the knowledge of the students.

Recommended References Books:

- Laura P. Hartman, Joe DesJardins, Business Ethics, McGraw Hill, 2nd Edition
- C. Fernando, Business Ethics – An Indian Perspective, Pearson, 2010
- Joseph DesJardins, An Introduction to Business Ethics, Tata McGraw Hill, 2nd Edition
- Richard T DeGeorge, Business Ethics, Pearson, 7th Edition
- Dr.A.K. Gavai, Business Ethics, Himalaya Publishing House, 2008
- S.K. Mandal, Ethics is Business and Corporate Governance, McGraw Hill, 2010
- Laura Pincus Hartman, Perspectives in Business Ethics, McGraw Hill International Editions, 1998

Recommended ICT Backup:-

<https://hbr.org/2015/03/corporate-governance-2-0>

<https://hbr.org/2019/10/a-guide-to-the-big-ideas-and-debates-in-corporate-governance>

Universities which were referred to modify syllabi in fresh autonomy.

- Savitribai Phule University, Pune
- Indira Gandhi Open University (IGNOU)
- Symbiosis International Deemed University, Pune

Pedagogy:

- Faculties often use cases, simulations, projects and videos to achieve learning objectives in the subject of Ethics & Governance
- Guest lectures - eminent professionals from the industry share their experiences and enable the aspiring students to broaden their vision.

MOOC Links :

<https://www.mooc-list.com/tags/business-ethics>

Business Economics – II

Modules at a Glance

Sr. No.	Modules	No. of Lectures	Credit Points
1	Introduction to Macroeconomics	15	3
2	Money, Inflation and Monetary Policy	15	
3	Constituents of Fiscal Policy	15	
4	Open Economy : Theory and Issues of International Trade	15	
Total		60	

Objectives

SN	Objectives
1	The Course aims at providing the students basic concept about the macroeconomics, it helps to understand and analyze the economy as a whole
2	To inculcate understanding relating to Functioning of Economy

Sr. No.	Modules / Units
1	Introduction to Macroeconomics
	<ul style="list-style-type: none"> • Macroeconomics: Meaning, Scope and Importance. • Circular flow of aggregate income and expenditure: closed and open economy models • The Measurement of National Product: Meaning and Importance - conventional and Green GNP and NNP concepts - Relationship between National Income and Economic Welfare. • Short run Economic Fluctuations : Features and Phases of Trade Cycles • The Keynesian Principle of Effective Demand: Aggregate Demand and Aggregate Supply - Consumption Function - Investment function - effects of Investment function - effects of Investment Multiplier on Changes in Income and Output.
2	Money, Inflation and Monetary Policy
	<ul style="list-style-type: none"> • Money Supply: Determinants of Money Supply - Factors influencing Velocity of Circulation of Money • Demand for Money : Classical and Keynesian approaches and Keynes' liquidity preference theory of interest • Money and prices : Quantity theory of money - Fisher's equation of exchange - Cambridge cash balance approach • Inflation: Demand Pull Inflation and Cost Push Inflation - Effects of Inflation- • Monetary policy: Meaning, objective and instruments, • Stagflation, Philips curve
3	Constituents of Fiscal Policy

	<ul style="list-style-type: none"> • Role of a Government to provide Public goods- Principles of Sound and Functional Finance • Fiscal Policy: Meaning, Objectives - Contra cyclical Fiscal Policy and Discretionary Fiscal Policy • Instruments of Fiscal policy : Canons of taxation - Factors influencing incidence of taxation - Effects of taxation Significance of Public Expenditure - - Public Debt - Types, Public Debt and Fiscal Solvency, Burden of debt finance • Union Budget -Structure- Deficit concepts-Fiscal Responsibility and Budget Management Act. • Laffer Curve , Fiscal Deficit and Economic Growth
4	Open Economy : Theory and Issues Of International Trade
	<ul style="list-style-type: none"> • Basis of the International Trade :Ricardo's Theory of comparative cost advantage - The Heckscher-Ohlin theory of factor endowments- terms of trade - meaning and types Factors determining terms of trade - Gains from trade - Free trade versus protection • Foreign Investment : Foreign Portfolio investment- Benefits of Portfolio capital flows Foreign Direct Investment - Merits of Foreign Direct Investment - Role of Multinational corporations • Balance of Payments: Structure -Types of Disequilibrium - Measures to correct disequilibrium in BOP. • Foreign Exchange and Foreign Exchange Market: Meaning of Foreign Exchange • Spot and Forward rate of Exchange - • Appreciation and Depreciation of currencies, currency convertibility

Justification:

1. From Unit No. 2 - Nature of inflation in a developing economy and inflation targeting topics are replaced with Stagflation and Philips curve so that students can get practical and wide knowledge about inflation.
2. From Unit no. 3 – Social security contributions – Low income support and social insurance programme replaced with Laffer curve, Fiscal deficit and Economic growth

because with help of graph students will be able to analyze actual working of economic activities.

3. From Unit no. 4 - Hedging, Speculation and Arbitrage -Fixed and Flexible exchange rates- Managed Flexibility replaced with Meaning of foreign exchange, Appreciation and depreciation of currencies, currency convertibility because we want to avoid repetition of concepts, which they are going to study in third year in International Finance (IF)

Learning outcomes:

- To learn about basic structure of economy.
- To analyze the basic concept of economy.
- To understand macroeconomic phenomenon in the world.
- To create knowledge of actual functioning of economy.

Learner Space:

1. Bank visit to understand actual working of commercial bank
2. Discussion on case studies
3. Research on current economic topics
4. Analysis and presentation of Union Budget and Economic Survey
5. Field Visit to exporting companies for understanding their working process

Job oriented topics :

Monetary Policy, Balance of Payments, Foreign Exchange market, Foreign Investments

Reference Books:

Reference Books	
	Ackley.G (1976), Macro Economic Theory and Policy, Macmillan Publishing Co. New York
	Ahuja. H.L., Modern Economics — S.Chand Company Ltd. New Delhi.
	Bhatia H.L.: Public Finance. Vikas Publishing House Pvt. Ltd
	Dornbush , Fisher and Startz, Macroeconomics, Tata-Mac Graw Hill, New Delhi.
	Dwivedi, D.N. (2001), Macro Economics: Theory and Policy, Tata-Mac Graw Hill, New Delhi.

	Friedman Hilton (1953) Essays in Positive Economics, University of Chicago Press, London.
	Francis Cherunilam International Economics Tata McGraw – Hill Publishing co.Ltd.New Delhi.
	Gregory .N. Mankiw, Macroeconomics, Fifth Edition (2002) New York:Worth Publishers
	Jhingan, M.L., Principles of Economics — Vrinda Publications (P) Ltd.
	Jhingan M.L. – International Economics – Vrinda publication Pvt. Ltd - Delhi
	Musgrave, R.A and P.B. Musgrave (1976) : Public Finance in Theory and Practice, Tata McGraw Hill, Kogakusha, Tokyo
	Shapiro, E (1996), Macro-Economic Analysis, Golgotha Publication, New Delhi.
	Singh.S.K. (2014): Public finance in Theory and Practice, S.Chand &co Pvt Ltd, New Delhi
	Salvatore Dominick – International Economics – John Wiley & sons, Inc Singapore
	Vaish .M.C. (2010) Macro Economic Theory 14th edition, Vikas Publishing House(P)Ltd

ICT Back up:

<https://en.wikipedia.org › wiki › Inflation>

https://en.wikipedia.org › wiki › Monetary_policy_

[Highlights of Union Budget 2021 - YouTube](#)

<https://www.youtube.com › watch>

https://en.wikipedia.org › wiki › Balance_of_payments

https://en.wikipedia.org › wiki › Foreign_portfolio_inv...

Universities referred while recommending syllabus in Fresh Autonomy

Savitribai Phule University, Pune

Delhi University

Pedagogy:

Modules	Pedagogy
Module 1	Assignments and Project work
Module 2	Data collection from various websites, Presentation
Module 3	Group Discussions
Module 4	Field Visit to Industries, BSE

LIST OF MOOC PROGRAM:

1. <https://www.edx.org/course/macroeconomics-literacy?index=product&queryID=195a89e347a16bb0fe83cc3f46e30f6f&position=2>
2. <https://www.edx.org/course/international-macroeconomics?index=product&queryID=5f6b09aa159032716f8414aad5cee9a&position=2>

Business Research Methodology

Modules at glance:

Sr. No	Modules	No of lectures Total 60	Credit Points
1.	Introduction to Business Research Methods	15	3
2.	Data Collection and Processing	15	
3.	Data Analysis and Interpretation	15	
4.	Advanced Techniques in Report Writing	15	
		60	

Objectives:

- 1) To familiarize the learners with the concept of Research.
- 2) To enable learners to understand the scope and complexity, Research in academic & Business scenario.
- 3) To make the learners familiar with the basic statistical tools and techniques applicable for Research.
- 4) To enable the learners in understanding and developing the most appropriate methodology For their research.
- 5) To enable learners understand how to draft research report.

Desired Outcomes:

- 1) Learners will get acquainted with the basics of research.
- 2) Learners will be able to frame hypothesis, research design and other technical aspects of Research.
- 3) Learners will get able to prepare research project report useful to society at large.

Total no. of Credits: 3

Proposed syllabus

	Modules/Units	Lectures (60)
UNIT-I	Introduction to Business Research Methods 1. Meaning and objectives of Research 2. Types of Research 3. Concepts in Research 4. Stages in Research process 5. Characteristics of Good Research	15

	6. Hypothesis – Meaning, nature, significance and types 7. Research design – Meaning, definition, importance, stages 8. Sampling – meaning, Methods 9. Workshop, Seminar, Conference, Symposium	
UNIT-II	Data Collection and Processing 1) Types of Data and Sources – Primary and secondary data sources 2) Methods of collecting Primary Data <ol style="list-style-type: none"> Observation – Structured, Unstructured, Disguised, undisguised Experimental – Field, laboratory Interview – personal, focus, in-depth Survey – Telephone, email, internet, social media Scaling Techniques – Likert, Semantic Differential Questionnaire 	15
UNIT-III	Data Analysis and Interpretation 1) Processing of Data – Editing, coding, tabulation 2) Analysis of Data – Meaning, Purpose, Types 3) Interpretation of data – Essentials, importance and Significance of Processing data 4) Multivariate Analysis – concept 5) Testing of Hypothesis – concept and problems 6) statistical Analysis- Reliability and Validity, Measures of Central Tendency, Measures of Dispersion	15
UNIT-IV	Advanced Techniques in Report Writing <ul style="list-style-type: none"> Report Writing – Meaning, Importance, functions of report, types Ethics and Research Objectivity, Confidentiality and Anonymity in Research Plagiarism Software Reference and Citation method (APA, CMS, MLA) Role of Computers in Research Process Scholarly publishing 	15
		60

Justification:

Students will know the practical aspects and basic concepts which will be more useful for them.

Job oriented skill development topics:

- Reference and Citation methods
- Plagiarism Software
- Role of Computers in Research Process
- Ethics and Research
- Data Analysis and Interpretation, Advanced Techniques in Report writing

Learner space:

- ✓ Contacting and interviewing Industry persons who can share their implemented practices or

- just give an overview of Research in Business.
- ✓ If any of the students thinking for business venture, research methods can be applied at initial level at learning phase along with studies.

Recommended Reference Books:

- 1) Plagiarism, the Internet, and Student Learning: Improving Academic Integrity by Wendy Sutherland smith
- 2) Research Methodology- C R Kothari
- 3) Marketing Research- Dr Naresh Malhotra

Recommended ICT backup:

- 1) <https://www.cusb.ac.in/images/cusb>
- 2) <https://www.questionpro.com/blog/business-research>
- 3) <https://institutionalresearch.syr.edu/assessment/asesspp/analyzing-and-interpreting-data>
- 4) <https://www.bigskyassociates.com/blog/bid>

Pedagogy

- Concepts of Business Research Methodology like data collection and processing, analysis and interpretation will be thoroughly explained to students.
- Practice through question answer sessions within classroom and homework assignments.
- Real data and survey results available publically will be discussed in classroom.
- Interviews, Surveys and some other research methods will be practically demonstrated to students that will help to gain their understanding towards the subject.

MOOC Links :

<https://www.liberty.edu/online/courses/busi600/>

<https://www.udemy.com/course/research-methods-for-business-students/>

Production and Total Quality Management

Modules at a Glance

Sr No	Modules	No of lectures Total 60.	Credit points
1.	Production Management	14	3
2.	Materials Management	16	
3.	Basics Of Productivity & TQM	16	
4.	Quality Improvement Strategies & Certifications	14	

Proposed syllabus

	Modules/Units	Lectures (60)
UNIT-I	<p>Production Management</p> <ul style="list-style-type: none"> Objectives, Components–Manufacturing systems: Intermittent and Continuous Production Systems. Product Development, Classification and Product Design. Plant location & Plant layout– Objectives, Principles of good product layout, types of layout. Location Strategies: Introduction, Location Planning Process Importance of purchase management. 	15
UNIT-II	<p>Materials Management</p> <ul style="list-style-type: none"> Materials Management: Concept, Objectives and importance of materials management Various types of Material Handling Systems. Inventory Management: Importance–Inventory Control Techniques ABC, VED, FSN, GOLF, XYZ, SOS, HML. EOQ: Assumptions limitations & advantages of Economic Order Quantity, Simple numerical on EOQ , Lead Time, Reorder Level, Safety Stock. Just-In-Time : Introduction, Characteristics of JIT, Key Processes to Eliminate Waste, Implementation of JIT, Pre-requisites for implementation, JIT Inventory and Supply Chains 	15
UNIT-III	<p>Basics Of Productivity & TQM</p> <ul style="list-style-type: none"> Basics Of Productivity & TQM: Concepts of Productivity, modes of calculating productivity. Importance Of Quality Management, factors affecting quality; TQM– concept and importance, Cost of Quality, Philosophies and Approaches To Quality: Edward Deming, J. Juran , 	15

	Kaizen , P. Crosby's philosophy. • Product & Service Quality Dimensions, SERVQUAL Characteristics of Quality, Quality Assurance, Service Gap Analysis, Quality Circle : Objectives Of Quality Circles, Ishikawa Fish Bone, Applications in Organizations. Simple numerical on productivity	
UNIT-IV	Quality Improvement Strategies & Certifications • Quality Improvement Strategies & Certifications: Lean Thinking, Kepner Tregor Methodology of problem solving, Sigma features, Enablers, Goals, DMAIC/DMADV. TAGUCHI'S QUALITY ENGINEERING, ISO 9000, ISO 1400, QS9000. Malcolm Baldrige National Quality Award (MBNQA), Deming's Application Prize.	15

Justification

- Location Strategy is added so that while learning about basic of Production a student should be able to understand how the location for plant should be selected.
- Under inventory Management Just in Time is added because it is the need of the hour to apply this inventory management technique in plants.
- To provide better services to customer Service Gap Analysis must be understood by the students.

Learning Outcomes

- Learners will get acquainted with the basic management decisions with respect to production and quality management
- The learner will understand the designing aspect of production systems
- It enables the learners to understand basics of inventory management
- Learners will be able to apply what they have learnt theoretically.

Learner space

- Case studies can be given to students which will give practical insight of topics. Field visit can be done by students to get real knowledge of production process.

Job oriented topics :

- Product Development, Classification and Product Design.
- Plant location & Plant layout, Product & Service Quality Dimensions, Quality Improvement Strategies & Certifications
- Material Management is a topic in which students can pursue Diploma or PG course and can grab jobs in warehouse or logistics field

Recommended References Books:

1. Production and Operations Management: R. Paneerselvam
2. Production (Operations) Management: L.C. Jhamb
3. K. Ashwathappa and K. Shridhar Bhatt ; Production and Operations management
4. Productivity Management: Concepts and Techniques, Sawhney S.C., Tata McGraw Hill
5. Srinivas Gondhalekar and Uday Salunkhe, "Productivity Techniques", Himalaya Publishing House
6. Gerard Leone and Richard D. Rahn, "Productivity Techniques", Jaico Book House
7. John S. Oakland, "TQM: Text with Cases", Butterworth-Heinemann
8. David J. Sumanth, "Total Productivity Management (TPMgt): A systematic and quantitative approach to compete in quality, price and time", St. Lucie Press

Recommended ICT Backup:-

1. <https://www.youtube.com/watch?v=ofjbr0EwjCI>
2. <https://www.youtube.com/watch?v=XE-Tdox0VIU>
3. <https://www.youtube.com/watch?v=ZmkuD9fcOPM>
4. https://www.youtube.com/watch?v=iw_axq-QUVw
5. <https://www.sjf.tuke.sk/transferinovacii/pages/archiv/transfer/28-2013/pdf/036-038.pdf>

Universities which were referred to modify syllabi in fresh autonomy.

- Sikkim & Manipal University
- DDCE, Utkal University, Bhubneshwar.

Pedagogy:

Production & Total Quality Management involves the integration of numerous activities and processes to produce products and services in a highly competitive global environment. This course considers the operations from a managerial perspective. This course can be taught by showing videos based on production & manufacturing, field visits to the different manufacturing plants will give real knowledge, Case studies will enable students in decision making in future.

MOOC Links :

<https://www.udemy.com/course/production-and-operations-management/>

https://onlinecourses.nptel.ac.in/noc20_mg06/preview

EVALUATION SCHEME

Examination pattern

External Exam : 60 marks

Internal Exam : 40 marks

External Exam Paper pattern:

Total marks : 60

Duration : 2 hours

Question No.	Particulars	Marks
1	Full length question OR Full length question	15
2	Full length question OR Full length question	15
3	Full length question OR Full length question	15
4	Objectives : (Multiple choice / True or False/ Match the following) OR Short Notes (3 out of 5)	15

*Note: Full Length Question of 15 Marks may be divided into two Sub Questions of 08 and 07 Marks. Or three Short notes of 5 marks.

Internal Exam pattern : 40 marks

	Particulars	Marks	Weightage
1	Internal written paper Objectives ; ½ mark each (5 marks) One sentence answers ; 1 mark each (5 marks) Short answers / Short notes ; 5 marks each (10 marks)	20	50%
2	Assignments/ Quiz/ Presentations	15	37.5%
3	Attendance, Class participation	05	12.5%

Passing Standard :

- The learners to pass a course shall have to obtain **a minimum of 40% marks in aggregate** for each course where the course consists of Internal Assessment and Semester End Examination.
- The learners shall obtain **minimum of 40% marks (i.e. 16 out of 40) in the Internal Assessment and 40% marks in Semester End Examination (i.e. 24 Out of 60)** separately, to pass the course and minimum of Grade E to pass a particular semester.
- ***A learner will be said to have passed the course if the learner passes the Internal Assessment and Semester End Examination together.***

Academic Council dated 20th May, 2022-23 as per Item Number: 2.03



**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND COMMERCE,
(AUTONOMOUS) DOMBIVLI (EAST), DIST. THANE
(Affiliated to University of Mumbai)**

Faculty of Arts

**DEPARTMENT OF MULTIMEDIA AND MASS
COMMUNICATION**

(Programme: Bachelor of Arts: B.A.)

SYLLABUS FOR

**S. Y. B.A. – MULTIMEDIA AND MASS COMMUNICATION (Semester
III and IV) Choice Based Credit System (CBCS)**

(with effect from the Academic Year: 2022-2023)

Bachelor of Arts in Multimedia and Mass Communication

Preamble

The Bachelor of Arts in Multimedia and Mass communication program is started with an aim to make the students employable and impart industry-oriented training.

1. Course Objective: The main objectives of the course are:

- To think analytically, creatively and critically in developing robust, extensible and highly maintainable technological solutions to simple and complex problems related to human, technology and environmental factors.
- To work effectively as a part of a team to achieve a common stated goal.
- To adhere to the highest standards of ethics, including relevant industry and organizational codes of conduct.
- To develop an aptitude to engage in continuing educational and professional development.

The syllabus spanning three years covers the industry endorsed relevant courses. The students will be ready for the jobs available in different fields of media.

2. Process adopted for curriculum designing:

The process involved both Academia & Industry professionals & the methods adopted were:

- Brainstorming
- Deliberations
- Personal Interactions
- Studied syllabi of other Universities & colleges in India and custom-made the same to our programs.

3. Salient features, how it has been made more relevant:

The mass media course of Bombay university started in the year 2000. It is now two decades since the course came into force and the media course today needs to be made more relevant to suit the current times. The Media landscape has changed a lot in the last two decades. The programs are relevant in today's academic sphere as:

- Traditional media has changed - in presentation & content
- Internet has become more accessible and has penetrated far and wide making academia accessible.
- Media convergence has grown paving way for collaborations across geographical boundaries
- Increased viewership of Films & TV content across platforms
- Boom of radio and digital audio platforms
- Growth of Transmedia

4. Learning Objectives:

The syllabi for this undergraduate program is for three years:

SYBAMMC

The learning outcomes involve both understanding the theoretical perspectives and practical applications. The programs enable students to learn:

- Global awareness of political, social, environmental, and corporate issues.
- To deal with issues- sensitively, cognitively & compassionately.
- The foundation, process, and practices of writing & be proficient in the same indifferent media.
- The foundation, process and nuances of filmmaking across platforms & be proficient in the same.
- To conceptualize, design, and produce content aesthetically.
- To acquire the knowledge, skills, and values that prepare them for future careers.

5. Learning Outcomes:

1. The program considers media industries and their relationship to culture and society, and the understanding of how communication works. The program emphasizes the development of critical thinking, professional writing skills and effective oral communication.
2. The Communication and Media Studies major prepares students for a wide variety of careers in business and industry, advertising, public relations and journalism, or advanced study
3. This program will equip the learners with professional skills essential for making career in Entertainment industry, Cinema, Television, OTT Platforms, social media platforms etc.
4. Students would demonstrate the ability to apply rhetorical principles in a variety of creative, cinematic, organizational, professional and journalistic venues.
5. Knowledge, skills, and values that prepare them for future careers in our interconnected society, whether in mass media or advanced study

6. Learners would develop a global awareness of political, social and corporate issues influenced by communication sensitivity and skills.
7. Learners will understand mass media as a system of interrelated forces, including historical foundations, technological advances, economic dynamics, regulatory constraints, and ethical concerns.
8. This programme will also give them an improved sense of self-confidence and self-efficacy and an awareness of their responsibilities as professionals in their field.
9. Learners will be able to create and design emerging media products, including blogs, digital audio, digital video, social media, digital photography, and multimedia.
10. They will be better equipped to grasp the complex relationship between communication/media theories and a diverse set of individual, social, and professional practices.
11. Learners will understand the underlying philosophical assumptions of, and be able to apply, communication research methods to address a range of media texts and audiences, production and technological practices, and relevant social issues.
12. Learners will comprehend the foundations, process, and practices of writing for and about the media, and demonstrate proficiency in writing across platforms.
13. Learners will be able to conceptualize, design, and produce one or more works in media based on effective principles and practices of media aesthetics for a target audience.

Learners will acquire the knowledge and skills required to pursue a career in the specialization of their choice.

**SYLLABUS FOR S.Y. Bachelors of Arts in
Multimedia and Mass Communication–
(Semester III & IV) Choice Based Credit System (CBCS)**

(With effect from the Academic Year 2022-2023)

Sr. No.	Subjects			
	Semester – III	Credits	Semester - IV	Credits
1.	Theatre and Mass Communication- I	02	Theatre and Mass Communication – II	02
	Course Code: PUAMMIII21-381		Course Code: PUAMMIV21-481	
2.	Corporate Communication and Public Relations	04	Writing and Editing for Media	04
	Course Code: PUAMMIII21-382		Course Code: PUAMMIV21-482	
3.	Media Studies	04	Media Laws and Ethics	04
	Course Code: PUAMMIII21-383		Course Code: PUAMMIV21-483	
4.	Introduction to Photography	04	Mass Media Research	04
	Course Code: PUAMMIII21-384		Course Code: PUAMMIV21-484	
5.	Film Communication – I	04	Film Communication – II	04
	Course Code: PUAMMIII21-385		Course Code: PUAMMIV21-485	

6.	Computers and Multimedia - I	02	Computers and Multimedia - II	02
	Course Code: PUAMMIII21-386		Course Code: PUAMMIV21-486	
	Total	20	Total	20

SEMESTER-III
Theatre and Mass Communication-I
Course Code: PUAMMIII21-381

COURSE OUTCOME:

1. Individual and team understanding on theatrical Arts
2. Taking ownership of space, time, story-telling, characterization and kinesthetic
3. Shaping young students' minds through expression of their perception, creating awareness of their role and place in society, their responsibilities and possibilities

MODULE AT GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Dramatic literature and theatre history	14	02
2.	Stage craft and theatre technique	10	
3.	Preparing the mind, body and voice	10	
4.	Reading plays and analyzing the characteristics	14	
	Total	48	

S. NO.	Modules	
1.	Dramatic literature and theatre history:	1. Study of the origin of theatre, history and growth 2. Theatre as a medium of mass communication 3. Theatre as a benefit to improving language skills 4. Study of traditions and forms: (a) Indian: Natya Shastra and Classical Indian Theatre Navarasa, Nayaka NayikaBhed,

		<p>VidushakaNatya – DrishyaKavya Trilogy –Natya –Nritya- Nritya Sangeet Study of some of the important Sanskrit playwrights i.e. Kalidasa, Bhasa, Shudraka, Sanskrit Theatre - Kootiyattam and Folk Theatre (Jatra, Pandavani, Tamasha, Ram Lila, Yakshagana, Swang, Therukoothu, Bhawai, Dashavatar, etc)</p> <p>(b) Growth of Indian Regional and Modern (Experimental) Theatre (c) Ancient Greek: Aristotle's Poetics Comedy, Tragedy, Satyr Chorus</p>
Activity	Presentations by students on different folk/traditional theatre forms from across the world through videos and images to study the salient features	
2.	Stage craft and theatre technique	<p>Theatre architecture and set design (Detailed study of Amphitheatre, Natyamandapam etc. Types of stages e.g. proscenium, arena, thrust, end etc.) Costume design: study of elements of colour, textures, shapes and lines Lighting and special effects: light sources, use of modern light equipment, planning and designing light Make up</p>
Activity:	Mask making, prop making experimenting with sound and live music and recorded music	
3	Preparing the mind, body and voice:	<p>Mind: Recalling experiences, talking about daily observations, collecting news clips, stories, poems etc. which may inspire theatre and enactment, increasing concentration, activities to enable ideation and improvisation Body: Simple rhythmic steps to instill grace and agility, Mime etc Voice: Narration of poems, understanding meter and tempo, weaving stories, using intonation and modulation</p>
Activity:	Mirror games	
4	Reading plays and analysing the characteristics.	<p>Western: Select any 2 1. Oedipus Rex - Sophocles 2. Long Day's Journey Into Night –Eugene O'Neil</p> <p>Indian: Select any 2 3. Yayati – Girish Karnad</p>

		4. <i>Shantata! Court Chalut Ahe</i> (1967; "Silence! The Court Is in Session") / <i>Sakharam Binder</i> (1971) Vijay Tendulkar
Activity:	Understand the salient features: Plot, Theme, Characterization, Narrative, Genre	

LEARNER'S SPACE:

1. Much Ado about Nothing
2. Look back in Anger
3. Romeo and Juliet / Hamlet – William Shakespeare
4. Death of a Salesman – Arthur Miller
5. Angels in America Caroline, or change- Tony Kushner
6. The Glass Menagerie – Tennessee Williams
7. Taj Mahal Ka Tender –Ajay Shukla
8. Ashad ka ek Din– Mohan Rakesh

INNOVATE PEDAGOGY

Theatre arts are indispensable life lessons. The purpose of Introducing Theatre and Mass communication paper is to increase students' understanding, appreciation, and critical perceptions of the theatrical event. The central aim of the paper is to prepare students for the practice of theatre. To this end a variety of practical skills must be developed and a corpus of knowledge acquired.

Readings and lectures will focus on the elements of theatrical practice; artists and innovators of theatre throughout history; and on the theatre's development as an art form and a social phenomenon; participation in class forum discussions and sharing of critiques and short reports will offer avenues to explore students' individual theatrical interests; and optional attendance at theatrical events will offer first-hand experience in theatre arts.

Taking risks in class and performing for an audience teaches students to trust their ideas and abilities. The confidence gained in drama applies to careers, and life in general. Making creative choices, thinking of new ideas, and interpreting familiar material in new ways are essential to drama. Theatre paper will teach students the most valuable life lessons such as.

Self-Confidence

Imagination

Empathy & Tolerance

Cooperation/Collaboration

Concentration

Communication Skills

Problem Solving:

Fun

Trust

Memory

Social Awareness

Aesthetic Appreciation

Drama enhances verbal and nonverbal expression of ideas. It improves voice projection, articulation, fluency of language, and persuasive speech.

RECOMMENDED REFERENCE BOOKS:

1. Cambridge Guide to Theatre. REF PN 2035 .C27 1995
2. Au, Susan. Ballet and Modern Dance. GV 1787 A79 2002
3. Theatrical Costume: A Guide to Information Sources. PN 2067 K47 1979
4. Fashion in Costume, 1200-2000. 2nd ed. GT 580 N85 2000
5. Annals of English Drama. REF Z 2014 D7 H25
6. 20th Century Theatre. 2v. PN 2189 L65 1983
7. The Oxford Companion to Indian Theatre. Ed. Ananda Lal. New Delhi: Oxford University Press, 5 February 2004
8. *Indian Theatre: Traditions of Performance*. Eds. Farley P. Richmond, Darius L. Swann, Phillip B. Zarrilli. Honolulu: University of Hawaii Press, 1990.
9. *Traditional Indian Theatre: Multiple Streams*. Kapila Vatsyayan. National Book Trust Press, 2005

RECOMMENDED ICT BACKUP:

<https://stagecrafttheatre.wordpress.com/about-us/>

<https://libguides.spokanefalls.edu/theater/stagecraft>

LIST OF MOOC PROGRAMS:

<https://www.edx.org/course/theater-and-set-design?index=product&queryID=8faf44d548cf3072a1d913ba40dc1d88&position=1>

<https://www.edx.org/course/finding-your-voice-as-a-playwright?index=product&queryID=389b7633609182cd2238a65f4198dcf0&position=3>

<https://www.edx.org/micromasters/writing>

[-for-performance-and-the-entertainment-industries?index=product&queryID=](#)

[6ed4081f35e1f5b8cdecc821b1007332&position=1](#)

SYLLABI REFERRED FROM:

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Projects for Internal Evaluation	40 MARKS
<ol style="list-style-type: none"> 1. Class Test – 20 Marks (Compulsory) 2. Project & Assignment – 10 Marks 3. Presentation – 05 Marks <ul style="list-style-type: none"> Individual: Enact a character (epic, historical, national or social leader through speech, poetry). Essential a mono act not more than 2 minutes Group: improvise on a current affairs topic and create a street play. Enact it within the college campus or outside the college gate. Not more than 5 minutes per team. Team should essentially be small. 5-6 members. Class: Watch a live performance of a play and write a review consisting of its special features. 4. Active Participation – 5 Marks 	

CORPORATE COMMUNICATION AND PUBLIC RELATIONS

COURSE CODE: PUAMMIII21-382

Course Outcome:

1. To provide the students with a basic understanding of the concepts of corporate communication and public relations.
2. To introduce the various elements of corporate communication and consider their roles in managing media organizations.
3. To examine how various elements of corporate communication must be coordinated to communicate effectively in today's competitive world.
4. To develop a critical understanding of the different practices associated with corporate communication with the latest trends and social media tools.

MODULE AT GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Dramatic literature and theatre history	14	04
2.	Stage craft and theatre technique	10	
3.	Preparing the mind, body and voice	10	
4.	Reading plays and analyzing the characteristics	14	
	Total	48	

SYLLABUS

S.No	Module	
1.	Introduction to Corporate Communication	Meaning, Need, and Scope of Corporate Communication towards Indian Media Scenario

	Keys concept in Corporate Communication	Corporate Identity: Meaning and Features, Corporate Image: Meaning, Factors influencing Corporate Image, Corporate Image creation sustainability and restoration (Online and traditional) Corporate Reputation and Management: Meaning, Advantages of Good Corporate Reputation.
	Ethics and Law in Corporate Communication	Importance of Ethics in Corporate Communication, Professional Code of Ethics, Mass Media Laws: Defamation, Invasion of Privacy, Copyright Act, Cyber-crime, and RTI.
2.	Introduction and Growth of Public Relations - Indian Scenario	Meaning, Definitions, Scope, Objective, and Significance of Public Relation in Business. Tracing Growth of Public Relations, in India, Internal and External PR. Reasons for Emerging International Public Relations, Indian and international public relations agencies, collaborations, mergers and joint ventures ¹
	Consumerism & Century of Self - Edwards Bernays & PR	Role of Edward Bernays in the growth of PR and transformation of a need-based society to a want-based society: <ul style="list-style-type: none"> • Torches of Freedom & Green Ball • Betty Crocker & Guilt Factor • Guatemala & Fake News Psychoanalysis, Propaganda, Publicity Pseudo-events & Lobbying, Persuasion
	Role of Public Relations in various sectors	Healthcare, Entertainment, Banking and Finance, Real estate, Fashion, Advantages and disadvantages of Public Relations Lifestyle and Service.
	Theories and Tools of Public Relations	Grunting's (4 models), Situational theory, Diffusion theory and various tools of Public Relations (Press conference, Press release, Media Dockets, Advertorials, Sponsorship.
	Media Relations	Introduction, Importance of Media Relations, Sources of Media Information, Building Effective Media Relations, Principles of Good Media Relations, Media analysis, and evaluation
	Employee Communication	Introduction, Sources of Employee Communications, Organizing Employee Communications, Benefits of Good Employee Communications, Steps in Implementing An Effective Employee Communications Programme, Role of Management in Employee Communications
	Crisis Communication	Introduction, Impact of Crisis, Role of Communication in Crisis, Guidelines for Handling Crisis, Trust Building, Case studies:

		<ul style="list-style-type: none"> ● Nestle Maggie ● IndiGo ● Got Milk? ● Nira Radia ● Cadbury Dairy Milk ● Tylenol
4.	Emerging trends, tools and technology	Introduction, Today's Communication Technology, Importance of Technology to Corporate Communication, pros, and cons of technology used in Corporate Communication.
	2. Employee Communication	Website, Online press release, Article marketing, Online newsletters, Blogs
	Crisis Communication	Role of Social media as Influential marketing, Identifying brand threats, influential journalists & stories, swiftly reacting to negative press, Viral marketing, engaging and interacting, storytelling, E-Public Relations, and its importance.

LEARNER SPACE:

1. workvivo.com
2. LinkedIn
3. mediatoolkit.com

INNOVATIVE PEDAGOGY:

Corporate Communication and Public Relations together form the foundation of a specific knowledge base and skill set required in the modern day corporate world. With the passage of time, every sector belonging to media, advertisement and creative literature is becoming increasingly corporate in terms of their workplace ethic, relationships with internal and external stakeholders and the transactions with their consumers. It is imperative to prepare the students for this challenge that awaits them after graduating. By means of incorporating factors like the students' aptitude, choices, intellectual capabilities and academic performance, the subject will focus not only on acquainting them with the details of the subject but also preparing them practically by conducting various activities which demand critical analysis, comprehensive learning, applying theoretical concepts to simulated situations and eliciting responses accordingly. Spread across four units designed specifically with the above mentioned factors in mind, the subject will facilitate the development of real-life skills that would further help the students in their professional life.

RECOMMENDED REFERENCES BOOKS:

Screening of Documentaries:

- **The Century of the Self - 4 Episode Series:**
<https://www.youtube.com/watch?v=DnPmg0R1M04&list=PLktPdpPFKHfoXRfTPOwyR8SG8EHLWOSj6>
- **Something Ventured:** <https://www.youtube.com/watch?v=QfdUXodNghI>

1. Public Relations Ethics, Philip Seib and Kathy Fitzpatrick
2. Public Relations- The realities of PR by Newsom, Turk, Kruckleberg
3. Principals of Public Relations-C.S Rayudu and K.R. Balan
4. Public Relations -Diwakar Sharma
5. Public Relations Practices- Center and Jackson
6. The Art of Public Relations by CEO of leading PR firms
7. Excellence in Public Relations and Communication Management- James E. Grunig, David M. Dozier, William P. Ehling, Larissa A. Grunig, Fred C. Repper, Jon White; Lawrence Erlbaum Associates.
8. Crisis Communications: A Casebook Approach- Kathleen Fearn-Banks; Lawrence Erlbaum Associates.
9. Strategic Planning for Public Relations - Ronald D. Apr Smith; Lawrence Erlbaum Associates.
10. Corporate Public Relations: A New Historical Perspective - Marvin N. Olasky; Lawrence Erlbaum Associates.
11. Public Relations Writing: Principles in Practice - Donald Treadwell, Jill B. Treadwell; Sage Publications.
12. Media Writing: Print, Broadcast, and Public Relations - W. Richard Whitaker, Janet E. Ramsey, Ronald D. Smith; Lawrence Erlbaum Associates.
13. New media and public relations - Sandra C. Duhé; Peter Lang.
14. Online Public Relations - David Phillips, Philip Young; Kogan Page.
15. Effective Public Relations - Scott Cutlip, Allen Center and Glen Broom; Pearson Education.
16. PR and Media Relations - Dr. G.C. Banik; Jaico Publishing House.

RECOMMENDED ICT BACKUP: -

<https://blog.reputationx.com/corporate-image>

<http://www.legalserviceindia.com/legal/article-676-legal-analysis-of-right-to-privacy-in-india.html>

LIST OF MOOC PROGRAM:

<https://www.edx.org/course/csr-reporting-and-communication?index=product&queryID=e1bfe711cb30676b5ef53bc809b63e42&position=2>

SYLLABI REFERRED FROM:

1. Kishinchand Chellaram College
2. Mithibai College

It must be mentioned here that syllabi of various international institutions were referred in order to acquire a basic idea for the necessary changes in the syllabus. That being said, it was not possible or feasible to replicate the changes they prescribed as they focused on specific topics as full length courses; and hence those institutions have not been mentioned above.

Topics focusing on skill development and employment:

1. Corporate Communication
2. Crisis Communication

3. Theories of Public Relations
4. International Public Relations
5. Joint ventures between Indian and International PR agencies

Internal evaluation methodology Class Test 20 Marks Presentation various topics learned 08 Marks Writing Press release /Mock Press conference 07 Marks Active participation 05 Marks	40 Marks
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MEDIA STUDIES
COURSE CODE: PUAMMIII21-383

COURSE OUTCOME:

To provide an understanding of media theories
To understand the relationship of media with culture and society

To understand Media Studies in the context of trends in Global Media
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MODULES AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Eras, relevance, connection to culture, literature	10	04
2.	Propaganda and propaganda theory-	14	
3.	Media and Identity	12	
4.	Theories on media effects	06	
5.	Meaning making perspectives	06	
	Total	48	

SYLLABUS

S.NO	MODULES	
1.	Eras, relevance, connection to culture, literature	<ul style="list-style-type: none"> • Era of Mass Society and culture – till 1965 • Normative Theories-Social Responsibility Theory • Development media theory
2.	Propaganda and propaganda theory-	Origin and meaning of Propaganda Hypodermic Needle/Magic bullet Harold Lasswell's model of communication
	Scientific perspectives to limited perspectives	Paul Lazarsfeld-Two step flow Carl Hovland and Attitude Change theory
	Brief introduction to Various schools of thought	The Bias of Communication theory- Harold Innis Toronto school (McLuhan) Birmingham School (Stuart Hall)

		Frankfurt School (Theodor Adorno and Max Horkheimer) Technological Determinism Theory- Raymond Williams
3.	Media and Identity	Cultural and Political Identities: Socio-Cultural identity - Feminism /Racism/ethnicity/ Caste/class/tribal/queer representations/ Folk culture Political identity – Media and elections
	Theories on media effects	Media effects and behaviour Media effect theories and the argument against media effect theories Agenda Setting Theory Cultivation Theory Politics and Media studies-media bias, media decency, media consolidation.
	Meaning making perspectives	New media Henry Jenkins-Participatory culture Internet as Public sphere-Habermas to Twitter McLuhan 's concept of Global village in the age of Netflix Uses and Gratification in the age of Internet transnational media and identity

LEARNERS SPACE:

Mass Communication in India

Journalism and Mass Communication

INNOVATIVE PEDAGOGY

Media Studies paper aim to prepare students for work in media-related industries, and train them to critically analyse the ways in which the media reflects, represents and influences the world. This paper will be taught through a combination of lectures, seminars, screenings, various practical activities and assessments, and one-to-one supervision, all of which aim at providing students with a broad understanding of today's media world. **Through this paper, we offer a combination of practical preparation for various media careers**, alongside opportunities to analyse media representations from different perspectives – including moral, political and historical. For instance, as well as gaining practical skills such as film production or copy-writing, students may also have the opportunity to explore issues such as media representations of gender or race, or of a particular culture or political conflict. Tasks and assessments are likely to come in a variety of forms, including exams and essays, class presentations and written assignments, as well as more practical project work, such as film or online content production.

RECOMMENDED REFERENCE BOOKS

1. Mass communication theory- Dennis quail
2. Mass communication theory: foundations, ferment and future-Stanley j Baranand Dennis k Davis
3. Introduction to mass communication: media literacy and culture updated edition 8th edition

4. Introduction to mass communication – Stanley J. Baran
5. Media and cultural studies- Meenakshi Gigi Durham and Douglas M Kellner
6. Social media: a critical introduction- Christian Fuchs

RECOMMENDED ICT BACKUP

[Mass-Communication-India-Keval-Kumar/dp/8172243731?ref=Oct_d_omg_d_4149449031&pd_rd_w=kZlar&pf_rd_p=d3b3b68b-946a-462b-9c08-c9d63e1e2cdc&pf_rd_r=9DY](https://www.edx.org/xseries/curtinx-from-digital-technologies-to-socialmedia?index=product&queryID=5fbc9ecb4c898f3ef0bafa026614c2ca&position=1)

LIST OF MOOC PROGRAMS

<https://www.edx.org/xseries/curtinx-from-digital-technologies-to-socialmedia?index=product&queryID=5fbc9ecb4c898f3ef0bafa026614c2ca&position=1>

SYLLABI REFERRED FROM:

4. Mithibai College
5. Kishinchand Chellaram College
6. Savitribai Phule Pune University

Media Studies graduates can find job opportunities in Marketing, Broadcasting, Photography, and other areas. Some of the most popular Media Studies careers follows as:

- **Digital Marketing Specialist –**
- **Media Planner**
- **Public Relations (PR)**
- **Social Media Manager**
- **Web Content Manager**

Internal Evaluation	40 Marks
Class Test	20 Marks
Oral and practical presentations	05 Marks
Group/individual projects /Group interactions / Quiz	10 Marks
Active participation	05 Marks

INTRODUCTION TO PHOTOGRAPHY

COURSE CODE: PUAMMIII21-384

Learning Outcome:

Lectures: 48

1. To introduce to media learner, the ability of image into effective communication.
2. To help the learner understand that media photography is a language of visual communication and is far beyond just point and shoot fun moments.
3. To practice how picture speaks thousand words by enlightening the learner on how.
4. To develop the base of visualization among learners in using pictures in practical projects.
5. To help learner work on given theme or the subject into making a relevant picture or photo feature.

MODULES AT GLANCE

Sr No	Modules	No of lectures	Credit Points
1.	Camera- The Storyteller	12	04
2.	Lens- Imaging Device	08	
3.	Light – The essential raw material	16	
4.	Composition	06	
5.	Digital Imaging: Electronic Format	05	
	Total	48	

SYLLABUS

S.NO.	MODULES	
1.	Camera- The Storyteller	1.The Body- Heart of the system; Difference between human eye and camera; ‘Development of camera’; Formats of camera- small, medium, large, half and full frame; Experiencing frame; Types of camera- DSLR, Viewfinder, Rangefinder, Mirrorless. 2.Aperture- Diaphragm that controls amount of light entering lens; Factor in Exposure calculation; Active factor of Depth

		<p>of field; Bokeh; F-numbers and aperture scale; Application of Depth of Field in advertising and Journalism.</p> <p>3.Shutter- Blind between lens and image sensor; Controls duration of light; Major factor in Exposure calculation; Main player in controlling action; Motion blur, Motion freeze and Long exposure effects; Application of motion blur/freeze in advertising and journalism; Synchronization with Flash, Creative Slow sync.</p> <p>4.Image Sensor- The image maker or recorder; Film v/s digital- Film: Photochemistry; Digital: Photo-electronics; Types of Sensor: CCD and CMOS; ISO: Photosensitivity (Sensor/Film Speed).</p> <p>5.Viewfinder- The control room cum monitor; Displays camera settings; Aperture, Shutter and ISO; Metering modes, Focusing modes, Exposure modes, frame count, File format etc</p>
2.	Lens- Imaging Device	<p>1.The eye of camera- Learning to see; Main player in image formation; Focusing the object (sharpening the image); Speed of the Lens (light intake ability); Numbers and Markings on the Lens- AF, ED, IF, IS, SW, ASP etc.</p> <p>2.Focal length: Which lens is suitable; The factor to consider for Type of Photography and choosing lens for the purpose; Main distinguishing factor; Fixed V/s Variable focal length.</p> <p>3.Image size: See close; The magnification ratio of a lens; Longer focal length = Bigger image size.</p> <p>4. Coverage angle: Crop out unwanted; Prime concern in Composition- How much of a scene a lens takes in from a viewpoint Safe focusing distance; Distortion: Barrel/ Pincushion.</p> <p>5.Types of lenses: The right one for the task at hand Prime Lens v/s Zoom lens Prime = Fixed focal length Zoom = Variable focal length; Normal, Wide angle and Telephoto; Special purpose lenses: Macro, Fish eye, Tilt-shift.</p>
3.	Light – The essential raw material	<p>1.Intensity and Exposure- How much light: consideration for exposure; Exposure triangle (A,S,ISO) The model of exposure.</p> <p>2.Direction and Lighting- From where: direction begets shadow; Shadow = Depth; Lighting = Shading; Three-point Lighting-Key: Main Fill: Contrast level (lighting ratio) Kicker: Separation or background light Types of lighting: Portrait, Effect, Ambient and Mood or drama</p> <p>3.Quality and Ambience- How soft or how hard: Effective size of light source; Small: Hard, Contrast, Sharp; Medium: Mid soft, moderate contrast, soft shadow; Large: Extra soft, low contrast, shadowless; Modifiers: Umbrella, Soft-box, Reflector, Diffuser, Grid, Gobos.</p>

		<p>4.Colour and Mood- Colour of light concept: Main distinguishing factor; Kelvin: Colour temperature; Pure light>True colours; White balance: Neutralizing Preset white balance and AWB; Colour and Mood (warm/cool)</p> <p>5.Light meter: Main input of exposure; Incident v/s Reflective (advantage / disadvantage) In built meter and Metering modes: Average, Center weighted, Spot, Matrix, Focus priority; Exposure Modes: M, A, S, P, and Smart program modes; Errors in inbuilt metering>Exposure compensation.</p>
4.	Composition	<p>1.Frame and Aspect Ratio- Dimensions of sensor and proportion; Aspect ratio: 2:3/ 4:5/ 16:9 (HD)</p> <p>2.Visual Indicators- Line, Shape, Size, Tone, Colour, Texture, Space and Center of interest; Subject= Aesthetic Assembly of objects.</p> <p>3.Rules of Composition- Rule of thirds/ Balance/ Leading lines/ Frame within frame, Enhancing depth/ Unusual viewpoint/ Shadow/ Pattern breaking</p> <p>4.Breaking the rules- Cropping, Panorama, Flattening.</p> <p>5.Viewpoint and Perspectives1, 2 and 3 point perspective: Vanishing points and viewpoint; Normal: The way we see; Enhanced: Exaggerated depth; Compressed: Feeling of distance taken away; Forced: Unrealism; Aligned: Back projection and green screen application.</p>
5.	Digital Imaging: Electronic Format	<p>1.Megapixel- Pixel and its values, Total number of pixels, File size.</p> <p>2.Resolution- Pixel Per Inch: Quality of Image, Magnification ratio.</p> <p>3.Image magnification- Viewing distance, Image size and pixilation; How large an image can be for a given megapixel.</p> <p>4.File formats- RAW, JPEG, TIFF (Bit and Compression) advantages and limitations of Raw format.</p>

LEARNER'S SPACE:

https://en.wikipedia.org/wiki/List_of_abbreviations_in_photography

INNOVATIVE PEDAGOGY:

The number of pictures that are being clicked daily is extremely high. Students are being exposed to millions of pictures on social media applications like Instagram. They are clicking pictures and sharing them. Without realizing, they are practicing photographers.

The syllabus is practically oriented. It will help students to understand cameras and photography through an activity-based learning. Each student presents a set of five photographs in class, dissecting the aesthetic aspects of the photograph once a week. By learning what kind of photographs students like, they can assess and click pictures that suit their sense of expression.

By learning about their preferences, individual assignments that require to click photographs on their own will help students practice the theory they learn. Discussing those photographs will enhance their understanding better and provides students with a community that they can rely on for feedback.

RECOMMENDED REFERENCE BOOKS

- 1.The secrets to creating amazing photos by Marc Silber
- 2.Light, gesture and colour by Jay Maisel

RECOMMENDED ICT BACKUP

<https://www.nikonusa.com/en/learn-and-explore/a/tips-and-techniques/how-to-read-your-nikkor-lens-barrel.html>

<https://www.nikonusa.com/en/learn-and-explore/a/products-and-innovation/chromatic-aberration.html>

LIST OF MOOC PROGRAMS

SWAYAM- Photojournalism https://onlinecourses.swayam2.ac.in/cec21_ge30/preview

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation:

Format	40 Marks
MCQ Examination	20 marks
Photo assignment	10 marks
Photo curation	5 marks
Active participation	5 marks

FILM COMMUNICATION I
COURSE CODE: PUAMMIII21-385

Learning Outcome:	Lectures: 48
<ol style="list-style-type: none">1. To inculcate liking and understanding of good cinema.2. To make students aware with a brief history of movies; the major cinema movements.3. Understanding the power of visuals and sound and the ability to make use of them in effective communication.4. Insight into film techniques and aesthetics.	

MODULES AT GLANCE

Sr No	Modules	No of lectures	Credit Points
1.	History: Still pictures and moving images	08	04
2.	Understanding aspects of film appreciation	08	
3.	The early cinema (1895 – 1950)	08	
4.	Major film movements and their impact	12	
5.	Mainstream Indian cinema and Indian parallel cinema	12	
	Total	48	

SYLLABUS

S.NO	MODULES	
1.	History: Still pictures and moving images	1. History of cinema 2. Birth of visual art 3. Transition from documentary to feature film
2.	Understanding aspects of film appreciation	1. Grammar, technology, and art. Director – the captain Writer - the backbone 2. Aspects of Film – Visual aspects and editing (creating meaning through editing); Mise-en-scene (art, costume, camera placement); cinematography, Understanding the language of cinema 3. Aspects of film sound – three components of sound; relationship sound and image
3.	The early cinema (1895 – 1950)	1. Early years (1895 – 1919) World and India 2. The silent era (1920 – 1931) 3. Early sound era (1930 – 1939) 4. Developmental stage (1940 – 1950)

4.	Major film movements and their impact	<ol style="list-style-type: none"> 1. The major cinema movements and their film makers 2. Brief history of Hollywood: Star system, academy Awards, global audience of Hollywood, Introduction of Streaming Services. 3. Italian neo-realism- Origin and impact on world cinema, work of Roberto Rossellini and Vittorio de Sica. 4. 'French Cinema – Work of Agnes Varda, Jean Luc Godard, and other New Wave filmmakers.' 5. Japanese cinema- Work of Yasujiro ozu, Akira Kurosawa, Hayao Miyazaki etc.
5.	Mainstream Indian cinema and Indian parallel cinema	<ol style="list-style-type: none"> 1. Art v/s Commercial 2. Indian meaningful cinema (Commercial) <ul style="list-style-type: none"> ● 'Bollywood stars and the Indian diaspora' ● Contemporary Bollywood cinema ● Globalisation and Indian cinema ● The multiplex era 3. Golden era of Indian Cinema – Important work of Bimal Roy, Guru Datt, Raj Kapoor and V. Shantaram 4. Indian New Wave cinema – Mrinal Sen, Mani Kaul, Girish Kasarvalli, MS Sathu 5. Parallel cinema: Contribution of Shyam Benegal, Govind Nihlani, Gulzar, Mani Kaul, Said Mirza etc.

LEARNER'S SPACE:

<https://www.encyclopedia.com/science/encyclopedias-almanacs-transcripts-and-maps/origins-and-development-magic-lantern>

<https://daily.jstor.org/the-magic-lantern-shows-that-influenced-modern-horror/>

INNOVATIVE PEDAGOGY:

The pervasiveness of cinema has increased exponentially. Today, students are watching movies at their homes, colleges, local trains, or anywhere they please due to the easy availability of internet. A word called 'content' is making rounds. Since so much attention is being paid to moving images and sounds, an enhanced understanding of it will help students of media understand the medium of cinema better, have a better grasp on the cultural impact and invest in the political and economic impact of cinema at large.

By conducting regular group activities, students will be exposed to multiple perspectives that can be adopted to read a film. Students presenting different aspects of one film in a month; dissecting single elements like cinematography, editing, dialogues, acting, etc. This will require them to apply the theoretical and practical knowledge present in the syllabus. From it,

they will be better equipped to frame their own arguments in a textual and verbal manner: through live discussions and written critical analysis.

RECOMMENDED REFERENCE BOOKS

1. Grammar of the Film Language by Daniel Arijon
2. What is Cinema? By Andre Bazin

RECOMMENDED ICT BACKUP

Film Comm I : <https://www.britannica.com/art/history-of-the-motion-picture>

<https://www.scienceandmediamuseum.org.uk/objects-and-stories/very-short-history-of-cinema#:~:text=The%20first%20to%20present%20projected,film%20printer%20all%20in%20one>

LIST OF MOOC PROGRAMS

SWAYAM – Film Studies

https://onlinecourses.swayam2.ac.in/ugc19_hs31/preview

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation Method:

Format	Marks
MCQ Examination	20 Marks
Critical film essay writing assignment	10 marks
Group activity (presentations)	5 marks
Active participation	5 marks

COMPUTERS MULTIMEDIA -01

COURSE CODE: PUAMMIII21-386

Course Outcome:

- 1.To help learners make media industry ready. This will help learners to be aware of the minimum requirement of the software when stepping out in the industry.
- 2.To introduce the media softwares to make the learners understand what goes behind the scene and help them choose their stream.
- 3.To prepare learners skilled enough for independency during project papers in TY Sem VI.
- 4.To help learners work on small scale projects during the academic period.

MODULES AT GLANCE

Sr No	Modules	No of lectures	Credit Points
1.	Photoshop: Pixel based Image editing Software	12	02
2.	CorelDraw: Vector based Drawing software	06	
3.	Quark Xpress/ InDesign: Layout Software	08	
4.	Premiere Pro: Audio-visual: Video editing software	10	
	Sound Forge/Sound Booth: Sound Editing Software	08	
	Total	48	

SYLLABUS

S.NO	MODULES	
1	Introduction to Photoshop Photoshop Workspace Working with images Image Editing Working with Text	Image editing theory Bitmaps v/s Vectors When to use Photoshop and when to use drawing tools The tools, Toolbox controls Property bar, Options bar, Floating Images in Different format in Photoshop, alates Image mode, Image size, canvas size Image resolution, size and resampling What is perfect resolution? Cropping to size and resolution Resizing v/s resampling Levels, Curves, Contrast adjustment, Colour adjustment Photo filters Text layer, Character palate, Paragraph palate, Text resizing, Text colour, Text attributes Working on simple project/ one page design
2.	Introduction to CorelDraw	Corel Draw Interface, Tool Box, coral draw extensions

	<p>Using text</p> <p>Exploring tools</p> <p>Applying effects</p> <p>Exporting in CorelDraw</p>	<p>Importing files in CorelDraw, Different file formats Artistic and paragraph text, Formatting Text, Embedding Objects into text, Wrapping Text around Object, Linking Text to Objects Text C2C: Basic shapes: Cut, Erase, Combine, Shaping tool: Nodes, Handles, Corners Convert to Curves: Reshaping, Creating figures, Logos Power of Blends, Distortion and contour Effects, Envelopes, Lens effects, Transparency, Creating Depth Effects and Power Clips Exporting, Types of export, Exporting for other software</p>
3.	<p>Introduction to Quark Xpress</p> <p>Text Edits in Quark</p> <p>Using palettes</p> <p>Colour correction in quark</p> <p>Exporting files</p>	<p>Format of text, Purpose of text selection, Aligning text in different design formats, Text alignment with embedded images Format of text, Purpose of text selection, Aligning text in different design formats, Text alignment with embedded images Using palettes for different types of publications made in quark, Magazine in quark, Newspaper in quark, Embedding images in proper formats, Colour correction on the images, Adjusting according to the colour tone of the publication Types of files, Exporting for different publications/templates, Newspaper, magazine, etc.</p>
4.	<p>Introduction to editing</p> <p>Introduction to premiere</p> <p>Understanding file formats</p>	<p>Small CLips Editing with basic Effects, Editing importance, Great editing examples, Editing for different formats (film/ad/news/etc.) How premiere helps in editing, Understanding the toolbar, Importing files, Experimenting with video and audio layers, Basics of editing (cut/layers/different windows/etc.) Understanding different file formats (AVI/MPEG/MOV/H264, etc.), Importing raw footage for edits, Performing video checks while editing What is color grading,</p>

	Using colour grading Exporting and rendering	Examples of color grading, Using filters and presents in color mixing, Applying presents on layers for editing Exporting in different formats, Choosing right formats for exposing, Managing quality while exporting, Rendering and maintain file format, Improving quality and time to render techniques
5.	Introduction to Digital Audio Concept of Dolby Digital Sound Recording Working with Sound Advanced Sound Processing	Sound basics, Audio band pitch volume Understanding Digital audio Sampling, bit rate Mono, Stereo, Quadrophonic Surround sound, 5.1 Channel, Subwoofer Difference in Dolby Digital and DTS, More about DTS Three-way sound speaker Recording Equipment Microphone and Types of microphones Preamps, Power amps, Sound card Input from audio sources, Extract audio from CD Different audio saving formats Wave, WMA, CDA, MP3 Digital Computer software Workspace, Play bar, timeline, Transport tool bar Working with audio file Basic editing, cut/copy/paste, Paste special Using Markers, Regions and Commands Sound processing techniques Channel converter, Bit depth converter Delay, Echo, Reverb, Chorus Mixing sounds, Noise gating. Expansion, Changing pitch and Time duration Sound track output Create your audio CD and mark chapters

LEARNER'S SPACE:

Sr. no.	Project/Assignment	Reason/Justification
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01 Print	Preparing a magazine or a series of posters of different size (type of a campaign promotion) using either quark or PS or Corel	Taking example of magazines or daily newspapers, students can come up with a sample. This will help them be industry ready with a fair hands-on experience.
02 Electronic	Making a short clip with the use of premiere and 3D Maya	Making a short video clip with the fusion of 3D Maya (some 3D element) and premiere to edit out a short clip (short film/ad/news reel, etc.)

INNOVATIVE METHODOLOGY:

1. The learner is learning Photography in Semester-III as well as Project papers in Semester - VI. Photoshop training shall make learner self-sufficient as well as employable in industry.
2. The learner is learning Film Communication in Semester -III. The knowledge of video editing shall help student to create short films and participate in competitions. Also learner can create his portfolio.
3. Dreamweaver is web designing software. Training in this can help learner to run his website and upload his work in photography and videography.
4. The learner is learning Radio and Television Production in Semester -IV. The audio is inevitable part and effective sound is the sole of audio and audio-video production. The training in sound processing shall help learner to use professional sound in his projects of Radio and Television as well as Film Communication.

RECOMMENDED REFERENCE BOOKS:

- Photoshop Bible McLeland Willey Publication
- Corel Draw Practical Learning: BPB Publication
- Quark Express-9 : Prepress Know-How Noble Desktop Teachers
- Desktop Publishing with Quark 10 Kindle version
- Digital Music and Sound Forge Debasis Sen BPB Publications

SYLLABI REFERRED FROM:

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation Method:	40 Marks
The objective of internal exercise is to help them identify image and video editing, and apply it to projects. This will ensure the knowledge of the students are up to the industry standards. Also helping them develop their vision to higher aesthetic level. To make students put in practical use the outcome of Film Communication.	
Format	40 Marks
MCQ Test	20 Marks

Assignment - Group project of Short film making (Electronic Media, Suggested Methods)	08 Marks
Group activity- making of magazines, banners posters ,brochures, video clip with 5-6 class members, effects for images	07 Marks
Active participation	5 Marks

To understand the understanding of cinema grasped by the students.
Suggested Screenings:
Documentaries on Famous Film makers – K. Balachander. K. Vishwanath, Adoor etc. Pinjra Apur Sansar/Megha Dhake Tara Sholay/Amar Akbar Anthony Hum Aapke Hai Kaun / Dilwale Dulhaniya Le Jayenge Bajirao Mastani/Manikarnika/Bahubali URI Film

SEM III	SEM IV	Justification
Photoshop Basic	Photoshop Advanced	Associated with Intro to Photography
CorelDraw	Adobe Illustrator	Both the software preferred in industry
Quark Express	Adobe InDesign	Both the software preferred in industry
Premiere Pro Basic	Premiere Pro Advance	Associated with Film Communication
Sound Forge/Booth	Dreamweaver	SF Associated with Radio and TV production and DW with Digital media production

SEM IV

THEATRE AND MASS COMMUNICATION- II COURSE CODE: PUAMMIV21-481

COURSE OUTCOME:

- 1.Direction and the works, developing an eye for details
- 2.Deeper understanding of theatre and how it has evolved to create human connections
- 3.Understanding the role theatre plays as a medium of mass communication in development of society

MODULES AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
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		Mohan Rakesh – North (critic) (Brief Discussion on all these dramatists)
	Theatre: Role as A Medium Of Mass Communication	<p>1.Theatre's role in social, cultural and political spaces: agriculture, literacy campaign, social and national harmony, human trafficking, child labor, gender discrimination, religious tolerance, women empowerment, prevention of HIV-AIDS, family planning, pulse polio, nutrition, environment pollution.</p> <p>2.Theatre for education and entertainment: Command or instructive function</p> <p>3.Theatre for development communication and social change: Persuasive function</p> <p>4.Theatre for development (T4D): Building peace in Sierra Leone, Wise Up in Botswana (awareness of HIV/AIDS) – UNICEF</p> <p>5.Development function: MacBride Commission report 'Many Voices One World'</p> <p>6.Use of folk theatre, modern experimental theatre, puppet theatre and mime for the above purpose to reach out to the rural masses.</p>
	Activity:	Get newspaper clips dealing with socio-political issues and prepare scripts for short skit.
	Direction and Production:	<p>Director And Producer</p> <ol style="list-style-type: none"> 1. What is direction, Qualities of a good director, Major responsibilities of a director, Principles of direction, Difference between creative director and interpretative director 2. Considerations for selection of a production, three producing formats, five departments of technical production 3. Who is a producer and what is his/her job? 4. Types of rehearsals, Determining the number of performances, Theatre angle
	Theatre management, marketing and event organization:	<p>Management And Marketing</p> <ol style="list-style-type: none"> 1. Business aspects of theatre, a career in arts administration and management. 2. Budgetary planning, Costs Strategy 3. Performing Arts System and audience relations, Marketing and Communication strategies, Bookings and ticketing, Reviews and previews – press and publicity 4. Institutional relations and protocol, Infrastructure management 5. Supplier and provider management
	Theatre As self-expression:	<p>Scripting, designing and promotions</p> <ol style="list-style-type: none"> 1. Devising the message

		2. Writing the script and finalizing it 3. Designing the set 4. Rehearsals, Staging the performance, curtains 5. Marketing and promotions
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LEARNER'S SPACE

Inside Art Direction: Interviews and Case Studies (Creative Careers)

Creative Direction in a Digital World: A Guide to Being a Modern Creative Director

INNOVATIVE PADEGOGY

Readings and lectures will focus on the elements of theatrical practice; artists and innovators of theatre throughout history; and on the theatre's development as an art form and a social phenomenon; participation in class forum discussions and sharing of critiques and short reports will offer avenues to explore students' individual theatrical interests; and optional attendance at theatrical events will offer first-hand experience in theatre arts.

RECOMMENDED REFERENCE BOOKS

1. Gokhale, Shanta. *Satyadev Dubey: a fifty-year journey through theatre*. Niyogi Books, 2011.
2. Brook, Peter. *The empty space: A book about the theatre: Deadly, holy, rough, immediate*. Simon and Schuster, 1996.
3. Bhattacharyya, Kapil Kumar, and D. Dasgupta. "Interpreting theatre as a communication medium." *Global Media Journal-Indian Edition* 4.2 (2013): 1-10.
4. Jensen, Amy Petersen. *Theatre in a Media Culture: Production, Performance and Perception Since 1970*. McFarland, 2007.

https://www.caluniv.ac.in/global-mdia-journal/ARTICLE-DEC2013/Article_7_C_M_Vinay_Kumar_Romesh_Chaturvedi_&_Shruti_Merhotr.pdf

RECOMMENDED ICT BACKUP

<https://study.com/academy/lesson/directing-in-theatre-tools-techniques.html>

<https://www.aber.ac.uk/modules-archive/2005/DR22910.html>

<https://study.com/academy/topic/principles-of-theatre.html>

LIST OF MOOC PROGRAMS

<https://www.edx.org/search?q=Theatre%20%20WRITING%20FOR%20>

PERFORMANCE

<https://www.edx.org/search?q=Theatre%20%20WRITING%20FOR%20PERFORMANCE>
[https://www.edx.org/course/writing-successfully-for-the-stage?index=product&queryID=](https://www.edx.org/course/writing-successfully-for-the-stage?index=product&queryID=7ed915cc7c0a55e1841c8afabc45c69c&position=2)

7ed915cc7c0a55e1841c8afabc45c69c&position=2

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Internal evaluation through projects:	40Marks
Class test	20 Marks
The class puts up a grand one act play	05
Marks	
Script writing	05 Marks
Character Development /Setting analysis and POV appreciation	05 Marks
Active Participation	05 Marks

WRITING AND EDITING FOR MEDIA
COURSE CODE: PUAMMIV21-482

COURSE OUTCOME

1. Provide the ability to understand writing styles that fit various media platforms.
2. It would help the learner acquire information gathering skills and techniques.
3. On completion of this course, students will be able to understand similarities and differences in writing for all forms of media including internet and digital.
4. The learner will gather knowledge of different news and copy formats along with appropriate style-sheets and layout.
5. The learner will imbibe the importance of writing clearly, precisely and accurately for different types of audiences
6. Provide acquire basic proficiency in proof-reading and editing.

MODULES AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Writing for print media	12	04
2.	Writing for broadcast media	10	
3.	Digital media	14	
4.	Director And Producer	12	
	Total	48	

SYLLABUS

S.NO	MODULES
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	Writing for print media	<ol style="list-style-type: none"> 1. What makes news? (Determinants of news) 2. Art and basic tools of writing 3. Steps and elements of writing-editorial, features and review 4. Writing for Newspapers and Magazines Writing a News story/feature stories/Article/Editorials(differences) 5. Leads, nut shelling and story structure (INSHORTS format) 6. Writing style and the stylebook 7. Public Relations and corporate writing various forms 8. Writing for Advertisements
	Writing for broadcast media	<ol style="list-style-type: none"> 1. Radio and Television: Challenges, strengths and weaknesses Writing for Television and Radio 2. programs 3. Script writing formats 4. Writing for interviews, live news and daily news 5. Radio jockeying / online radio and new trends (Intro) 6. Storyboarding for Television commercials
	Digital media	<ol style="list-style-type: none"> 1. Difference between newspaper writing and writing for the Web, headline writing, deck heads, subheads, lists and hyperlinked content 2. How to produce well-written webpages Written content for the web, digital spaces and digitally distributed media. Development of web-specific style guides, convergence of text and video on digital. 3. Emerging fields of personal publishing, including blogging and micro blogging (or publishing on LinkedIn). 4. Dealing with breaking news and fake news in real time. 5. Writing for Advertisements through 'Emailers as advertisements'. 6. Writing Blogs (corporate blogging) (film reviews)
	Editing	<ol style="list-style-type: none"> 1. Checking spelling and grammar. Check news/magazine copies for headlines (types, appeal), sub heads, Use of graphics and illustrations for construction and information flow in Newspapers. 2. Rewriting leads 3. Achieving fitment with spacing requirements at any newspaper, magazine or webpage. 4. Checking Advertising agency copies, checking headline/sub headline (types, appeal) and maintaining sequence and flow in body copy. 5. Online editing: editing requirements; content, layout, clarity, style, 6. conciseness, online headlining -website design. (editing softwares)

LEARNER'S SPACE

Ogilvy on advertising by David Ogilvy
Public Opinion by Walter Lippmann

INNOVATIVE PEDAGOGY:

The most prominent media out there is social media. Students spend most of their time on social media engagement. Majority of media commerce is directed at social media. Thus, sharpening their content creation ability on social media will be fruitful to their careers. It will also help them apply the rules of writing. They will learn how to adapt the rules of traditional media to these new forms of presentation. Creating a social media page for the department wherein student will have to publish their writings and create material for the page, promote and market it. It will be curated by the faculty, but the material to be shared will be created by the students. Thereby, allowing a smooth transition from theory to practice that can be displayed on students' portfolios.

RECOMMENDED ICT BACKUP

LIST OF MOOC PROGRAMS

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Internal Evaluation Methodology	40 MARKS
Class Test	20 Marks
Editing assignments	05 Marks
Writing blogs	05 Marks
Projects for print media	05 Marks
Active Participation	05 Marks

MEDIA LAWS AND ETHICS

COURSE CODE: PUAMMIV21-483

Course Outcome:

1. To provide the learners with an understanding of laws those impact the media.
2. To sensitize them towards social and ethical responsibility of media.

MODULES AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Constitution and Media	09	04
2.	Regulatory bodies	09	
3.	Media Laws - I	10	
4.	Media Laws -II	09	
5.	Media Ethics and Social Responsibility	09	
	Total	48	

SYLLABUS

S.NO	MODULES
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1. Constitution and Media	Core values of the Constitution Freedom of Expression Judicial Infrastructure Social responsibility of the media Social media	<p>Refreshing Preamble, unique features of the Indian Constitution, Core Structure of the Constitution</p> <p>1.Article 19 (1)(a) 2.Article 19(2)</p> <p>Hierarchy of the courts Independency of the judiciary Legal terminologies Judicial Activism</p> <p>Social Responsibility Theory Emerging Issues in Social Responsibility Theory in today's era</p> <p>Threat of Fake News and facts verification Social media decorum Cyberlaws, Cyber Bullying and remedies</p>
2 Regulatory bodies	Press Council of India TRAI IBF ASCI NBA	<p>Brief history: Statutory status Structure Powers and limitations Role of Telecom Regulatory Authority of India</p> <p>Indian Broadcasting Foundation Broadcasting Content Complain Council, Broadcasting Audience Research Council</p> <p>Advertising Standard Council of India Mission Structure Consumer Complaint Council</p> <p>News Broadcasters Association: Structure Mission Role</p>

3. Media Laws –I	Copyright and IPR Defamation IT Act Contempt More acts	What is copyright, Intellectual Property Rights Exceptions Major Amendments Recent Case studies Definition Civil, Criminal Exceptions Recent case studies Information Technology Act 2000 Amendment 2008 Section 66A Section 67 Case Studies Contempt of Court Contempt of Parliament 1. Drugs and Magic Remedies Act, (Objectionable Advertisements) 2. Emblems and Names Act (Prevention of Improper Use)
4. Media Laws –II	Right to Privacy Morality and Obscenity Unfair Practices OSA RTI	1. Evolution 2. Right to Privacy a Fundamental Right Indecent Representation of Women Act. 19.2, IPC 292, 293 Change in perception with time Unfair Trade Practices and the Competition Act 2002 Official Secrets Act Controversies Case Studies Right to Information Act 2005 Brief History Importance and current status

5. Media Ethics and Social Responsibility	Why Ethics Ethical responsibility of journalist Fake News Ethical responsibility of advertisers Stereotyping	What is ethics? And why do we need ethics? 1. Code of conduct for journalist 2. Conflict of interest 3. Misrepresentation 4. Shock Value 1. Post -truth and challenges of fighting fake news 2. Techniques of fact verification. 3. New avenues of Fact Checking, Citizen Journalism Violation of ethical norms by advertisers 1. Case Studies Stereotyping of religious minorities, tribals, women, social and environmental activists, senior citizens, regions, LGBT, and oppressive caste-based stereotypes
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LEARNER'S SPACE

1. clpr.org.in/tag/cadindia

2. The Morning Show (S1 & 2)

INNOVATIVE PADEGOGY

Media Laws and Ethics as a subject has great theoretical and practical value. For students of Mass Media and Communication, this subject not only makes them aware of the laws, safeguards and rights that the Constitution guarantees to all citizens including themselves, but also brings them face to face with the work ethic and practices they shall have to follow as professionals in the field. The paper is designed in a manner that shall allow the students to break free from their prejudices and preconceived notions about certain sections of the society and look at the facts of the matter with more rationality and objectivity. By acquainting them with various kinds of laws that deal with specific issues, the subject creates awareness, empathy and a sense of ownership among students as budding adults and citizens, as well as responsible media professionals.

Topics focusing on skill development and employment:

1. Copyright and IPR
2. IT Act
3. New avenues of fact checking and Citizen Journalism
4. RTI

RECOMMENDED REFERENCE BOOKS

1. Basu, D.D. (2005). Press Laws, Prentice Hall.
2. Iyer, V. (2000), Mass Media Laws and Regulations in India, AMIC Publication.
3. Thakurta, P.G. (2009). Media Ethics, Oxford University Press.
4. Duggal, P. (2002). Cyber law in India, Saakshar Law Publications
5. P. B. Sawant and P.K. Bandhopadhyaya- Advertising Laws and Ethics – Universal Law Publishing Co
6. Media Laws: By Dr S R Myneni, Asian Law
7. ADAMS, Julian – Freedom and Ethics in the Press, New York, Rosen, 1983.
8. BAIRD, Robert M., & al. – (ed.), The Media and Morality (Contemporary Issues), Amherst (NY), Prometheus Books, 1999.
9. BELSEY, Andrew, CHADWICK, Ruth, – Ethical Issues in Journalism and the Media, London, Routledge, 1992.
10. BUGEJA, Michael J. – Living Ethics: Developing Values in Mass Communication, Needham Heights (MA), Allyn & Bacon, 1995.
11. CHADWICK, Ruth – (ed.), The Concise Encyclopedia of Ethics in Politics and the Media, San Diego (CA), Academic Press, 2001.
12. CHRISTIANS, Clifford, FERRE, John P., FACKLER, Mark P., – Good News: Social Ethics and the Press, New York, Oxford University Press, 1992. [philosophical approach]
13. CHRISTIANS, Clifford, TRABER, Michael, – (ed.), Communication Ethics and Universal Values, London, Sage, 1997.
14. COHEN, Elliot D. – (ed.), Philosophical Issues in Journalism, New York, Oxford University Press, 1992.
15. COHEN, Elliot D., ELLIOTT, Deni, – Journalism Ethics: A Reference Handbook, Santa Barbara (CA), Abc Clio, 1998.
16. FULLER, Jack – News Values: Ideas for an Information Age, Chicago, University of Chicago Press, 1996.
17. GORDON, A.D., KITTROSS, John M., – Controversies in Media Ethics, New York, Addison Wesley, 1999. [2nd ed.]
18. HASELDEN, Kyle – Morality and the Mass Media, Nashville (TN), Broadman, 1968. [Christian viewpoint]
19. IGGERS, Jeremy – Good News, Bad News: Journalism Ethics and the Public Interest, New York, Worldview Press, 1998.
20. JOHANNESSEN, Richard L. – Ethics in Human Communication, (1975), Prospect Heights (IL), Waveland Press, 2002. [5th ed.]
21. KIERAN, Matthew – Media Ethics: A Philosophical Approach, Westport (CT), Praeger, 1997.
22. KNOWLTON, Steven R., PARSONS, Patrick R., – The Journalist's Moral Compass: Basic Principles, Westport (CT), Praeger, 1995.
23. LAMBETH, Edmund B. – Committed Journalism: An Ethic for the Profession, Bloomington (IN), Indiana University Press, 1992. [2nd ed.]
24. LESLIE, Larry Z. – Mass Communication Ethics: Decision Making in Postmodern Culture, Boston (MA), Houghton-Mifflin, 2000.
25. MAKAU, J.M., ARNETT, R.C., – (ed.), Communication Ethics in an Age of Diversity, Urbana (IL), University of Illinois Press, 1997.
26. MCKINZIE, Bruce W. – Objectivity, Communication and the Foundation of Understanding, Lanham (MD), University Press of America, 1994.
27. MERRILL, John C. – Legacy of Wisdom: Great Thinkers and Journalism, Ames (IA), Iowa State University Press, 1994.
28. MERRILL, John C. – Journalism Ethics: Philosophical Foundations for News Media, New York, St Martin's Press, 1997.

29. RIVERS, William L., MATHEWS, Cleve, – Ethics for the Media, Englewood Cliffs (NJ), Prentice-Hall, 1988.

RUBIN, Bernard – Questioning Media Ethics, Westport (CT), Praeger, 1978.

RECOMMENDED ICT BACKUP

Films:

1. The Truman Show

2. Peepli Live

LIST OF MOOC PROGRAM

Media Law

<https://www.edx.org/course/media-law?index=product&queryID=648036e1edbfba2fc0106344f9fdc267&position=2>

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Internal Evaluation Methodology		40 MARKS
1.	Class Test	20 Marks
2.	Group presentation based on field visit eg. visit to court	08 Marks
3.	Group discussion On current issues relating to media law	07 Marks
4.	Active Participation	05 Marks

MASS MEDIA RESEARCH
COURSE CODE: PUAMMIV21-484

Course Outcome:

To introduce students to debates in Research approaches and equip them with tools to carry on research

To understand the scope and techniques of media research, their utility and limitations

MODULES AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Introduction to mass media research	12	04
2.	Research Design	10	
3.	Data Collection Methodology	12	
4.	Content analysis	05	
5.	Application of research in mass media	05	
6.	The Semiotics of the Mass Media.	03	
	Total	48	

SYLLABUS

S.NO	MODULES
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1.	Introduction to mass media research	<ol style="list-style-type: none"> 1. Relevance, Scope of Mass Media Research and 2. Role of research in the media 3. Steps involved in the Research process 4. Qualitative and Quantitative Research 5. Discovery of search problem, Identifying dependent and independent variable, developing hypothesis
2.	Research Design	<ol style="list-style-type: none"> 1. Concepts, Types and uses 2. Research Designs- <ol style="list-style-type: none"> a) Exploratory b) Descriptive and Casual
3.	Data Collection Methodology	<ol style="list-style-type: none"> a) Primary data collection methods <ol style="list-style-type: none"> 1. Depth interviews 2. Focus group 3. Surveys 4. Observations 5. Experimentations b) Secondary Data Collection Methods c) Literature review d) Designing Questionnaire and measurement techniques <ul style="list-style-type: none"> Types and basics of questionnaire Projective techniques Attitude measurement scales e) Sampling process f) Data Tabulation and Research report format
4.	Content analysis	<ol style="list-style-type: none"> a. Definition and uses b. Quantitative and Qualitative approach c. Steps in content analysis d. Devising means of a quantification system e. Limitations of content analysis
5.	Application of research in mass media	<ol style="list-style-type: none"> a. Readership and Circulation survey b. TRP c. RRP d. Audience Research e. Exit Polls <p>Advertising Consumer Research</p>
6.	The Semiotics of the Mass Media	<ol style="list-style-type: none"> a. What is semiotics in media? b. Why is semiotics important? c. What are codes in semiotics? <p>Semiotics and media</p>

LEARNER'S SPACE

1. Documentary screening or understanding the process of Interviewing
2. Movie screening for study of semiotics

INNOVATIVE PADEGOGY

Research is the basis of all academic and exploratory literature that is produced. At the heart of effective and strong journalism, strategy building, trend prediction lies good, substantial and comprehensive research.

Method followed: It is imperative that the students are introduced to the basics of research in the field of Mass Media which will act as a foundation for their career choices. It will facilitate critical thinking, a problem solving attitude and evaluation of covert and overt factors by means of collecting, collating and verification of data. Students will be required to not only learn but also apply all that they are taught, by means of conducting pilot surveys.

Topics focusing on skill development and employment:

- 1.Designing questionnaires and measurement technique
- 2.Application of research in Mass Media
3. The Semiotics of Mass Media

RECOMMENDED REFERENCE BOOKS

1. Research Methodology; Kothari: Wiley Eastern Ltd.
2. A Handbook of Social Science Research: Dixon, Bouma, Atkinson OUP
3. Analysing Media Message: Reffe, Daniel; Lacy, Stephen And Fico, Frederick (1998); Lawrence Erlbaum associates.
4. Media Research Methods: Gunter, Brrie; (2000); Sage
5. Mass Media Research: Wimmer And Dominick
6. Milestones In Mass Communication: Research De Fleur
7. Hantrais, L. (2005) 'Combining methods: a key to understanding complexity in European societies?', *European Societies*, 7(3): 399–421.
8. Hantrais, L. (2009) *International Comparative Research: theory, methods and practice*, London / New York: Palgrave. <http://www.palgrave.com/research/hantrais/> July 2012
9. Hantrais, L. and Mangen, S. (eds) (1996) *Cross-National Research Methods in the Social Sciences*, London / New York: Pinter / Cassels.
10. Hantrais, L. and Mangen, S. (eds) (2007) *Cross-National Research Methodology & Practice*, London / New York: Routledge.
11. Lallement, M. and Spurk, J. (eds) (2003) *Stratégies de la comparaison internationale*, Paris: CNRS Éditions.
12. Lewis, S. and Brannen, J. (2011) 'Reflections on working in cross national teams', in I. Jojer and S. Hojer (eds), *Familj, vardagsliv och modernitet*, Goteborg: Goteborg Universitet, pp. 275–87.
13. Manning, S. (2010) 'The strategic formation of project networks: a relational perspective', *Human Relations*, 63 (4): 551–73.
14. Øyen, E. (ed.) (1990) *Comparative Methodology: theory and practice in international social research*, London / Newbury Park, CA: Sage.
15. Przeworski, A. and Teune, H. (1970) *The Logic of Comparative Social Inquiry*, 1st edn, New York / London: John Wiley & Sons.

16. Ragin, C. (1987) The Comparative Method: moving beyond qualitative and quantitative strategies, Berkeley, CA / London: University of California Press.
 17. de Vaus, D. (2008) 'Comparative and cross-national designs', chapter 15 in P. Aluusatari, L. Bickman and J. Brannen (eds), Handbook of Social Research, London: Sage.
 18. Vigour, C. (2005) La Comparaison dans les sciences sociales: pratiques et méthodes, Paris: La Découverte.
- Warwick, D.P. and Osherson, S. (eds), Comparative Research Methods, Englewood Cliffs, NJ: Prentice-Hall.

RECOMMENDED ICT BACKUP

Documentary

1. The Great Hack

2.

<http://www.legalserviceindia.com/legal/article-676-legal-analysis-of-right-to-privacy-in-india.html>

LIST OF MOOC PROGRAMS-

1.Introduction to Social Research Methods

<https://www.edx.org/course/introduction-to-social-research-methods?index=product&queryID=bdcd4ddf4b811f8687f8512de05eda0b&position=2>

2.Quantitative and Qualitative Research for beginners

<https://www.edx.org/course/quantitative-and-qualitative-research-for-beginners?index=product&queryID=bdcd4ddf4b811f8687f8512de05eda0b&position=1>

3.Quantitative Marketing Research

<https://www.edx.org/course/quantitative-marketing-research?index=product&queryID=bdcd4ddf4b811f8687f8512de05eda0b&position=15>

SYLLABI REFERRED FROM:

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation Methodology		
	MCQ Test	20 Marks
	Pilot Survey/ Assignment	15 Marks
	Active Participation	05 Marks

FILM COMMUNICATION- II
COURSE CODE- PUAMMIV21-485

Course Outcome:

1. Awareness of cinema of different regions.
2. Understand the contribution of cinema in society.
3. How to make technically and grammatically good films.
4. From making to marketing of films.
5. Economic aspects of film.
6. Careers in films

MODULE AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Regional Cinema	09	04
2.	Hindi Cinema	09	
3.	Cinema New	15	
4.	Film Making	07	
5.	Film Culture	08	
	Total	48	

SYLLABUS

Module	Topics	Detail
1.	Regional Cinema	Marathi – V. Shantaram Bengali – Satyajit Ray, Ritwik Ghatak

		South India – K. Balachandar, K. Vishwanath, Adoor Gopalakrishnan
2.	Hindi Cinema	Popular Hindi commercial films (Bollywood) Past to Present Economic contribution of cinema Convergence of art and commerce Genres in present
3.	Cinema Now	Contemporary Era Celluloid to digital (1990-1999) Digital explosion (2000 onwards) Media convergence and film viewing culture
4.	Film Making	Aspects of production systems- financial, administrative, creative Pre-production Production Post-production Film and censorship Return on investment in film industry- Distribution, promotion, marketing, branding, Social Media',
5.	Film Culture	Introduction to film institutes, film bodies, trade associations such as FTII, NFAI, Films Division, DFF, IFFI, CBFC, IFTDA, SGI, WICA etc. Major film festivals- Indian and abroad Film awards- Nature and type of awards; major film awards in India and abroad Film Criticism- Importance and value

LEARNER'S SPACE:

1. Three essays on style by Erwin Panofsky
2. Better living through criticism by A. O. Scott
3. Hitchcock/Truffaut by Francois Truffaut

INNOVATIVE PEDAGOGY:

Having learnt about film communication over two semesters, students should be capable of forming informed opinions of their own about the subject matter. To test their abilities regularly, students will be required to create a blog of their own. Making each student start a film criticism blog wherein they will be asked to watch a film every fortnight and asked to write a review on it. The results will be discussed in class to develop film appreciation and writing skills. Thus, students will become a part of the larger film culture.

RECOMMENDED ICT BACKUP

<https://www.scienceandmediamuseum.org.uk/objects-and-stories/very-short-history-of-cinema#:~:text=The%20first%20to%20present%20projected,film%20printer%20all%20in%20one>

LIST OF MOOC PROGRAMS

SWAYAM – Film Studies

https://onlinecourses.swayam2.ac.in/ugc19_hs31/preview

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation Methodology		
	<ul style="list-style-type: none">● Class test-● Blog creation-● Critical analysis of one director-● Active participation-	20 Marks 10 Marks 05 Marks 05 Marks

COMPUTER MULTIMEDIA II

COURSE CODE- PUAMMIV21-485

Course Outcome:

Since the introduction of computers in media every process of image editing and film editing is computerized. Various soft wares –beginners to professional- are developed and today

software knowledge equals literacy in media. Image, Audio and Video in digital format are easy to share and store as well as saved to multiple places. The knowledge of software has become extremely essential to survive and grow in media today.

MODULE AT A GLANCE

Sr. No.	Module/Units	No of lectures	Credit Points
1.	Photoshop: Advanced Image Editing	12	02
2.	Adobe Illustrator: Vector based Drawing software	07	
3.	InDesign: Layout Software	08	
4.	Premiere Pro: Audio-visual: Advanced application	10	
5.	Adobe Dreamweaver: Web designing software	11	
	Total	48	

SYLLABUS

Modules		Details	Lectures
1	Photoshop: Advanced Image Editing		12
	Working with multiple images	Mixing Selection marquee, Lasso, Magnetic lasso, feather Slice tool, Erase tool Pen tool and image tracing Clone tool, Stamp tool	

	2. Image Effects	Editing Burning, Dodging Smudge, Sharpen, Blur Eyedropper, Choosing colour Swatches, Colour pick Filters	
	Working with Layers	Layer basics Changing background, Gradient Moving linking aligning layers Applying Transformations Masking layers Masks and extractions Layer effects, Adjustment layers	
	4. Wonders of Blend Modes	Blend modes Advanced blending options Layer blends	
	Fully Editable Text	Text as art, Glyphs, Creative text Type mask tool, Image in text Text to path and Direct selection Path selection (black arrow) Creating Professional design using all the tools Making multiple images work as poster	01
2	Adobe Illustrator: Vector based Drawing software		07
	1. Introduction to Adobe Illustrator	Illustrator Interface, Tool Box, Panels and Bars Importing files in illustrator, Different file formats	
	2. Using text	Artistic and paragraph text, Formatting Text, Embedding Objects into text, Wrapping Text around Object, Linking Text to Objects	
	Creating Simple designs	Text based logo replication, Shape based logo replica, Creating new symbols, Fill colour, Outline colour, Weight and opacity	
	4. Applying effects	Power of Blends, Distortion and contour Effects, Envelopes, Lens effects, Transparency, Creating Depth Effects and Power Clips	
	Exporting in Illustrator	Exporting, Types of export, Exporting for other soft wares Basic Drawing tool	
3	InDesign: Layout Software		08

	1. Introduction to Adobe In Design	List the menus, List the tools, Palettes Benefits of using In Design, Application of In Design	
	Text Edits in InDesign	Format of text, Character and Paragraph Bars Purpose of text selection, Aligning text in different design formats, Text alignment with embedded images	
	3. Using palettes	Using palettes for different types of publications made in InDesign, Magazine in InDesign, Paragraph styles Newspaper in InDesign, Paragraphs type palette, Text wrap palette	
	Colour correction in InDesign	Embedding images in proper formats, Colour correction on the images, Adjusting according to the color tone of the publication	
	5. Exporting files	Types of files, Exporting for different publications/templates, Newspaper, magazine, etc.	
4	Premiere Pro: Audio-visual: Advanced application		10
	Introduction to editing	Editing importance, Great editing examples, Editing for different formats (film/ad/news/etc.)	

	2. Exploring Premiere Pro	How premiere helps in editing, Understanding the toolbar, Importing files, Experimenting with video and audio layers, Basics of editing (cut/layers/different windows/etc.)	
	Right application of various file formats	Understanding different file formats (AVI/MPEG/MOV/H264, etc.) Importing raw footage for edits, Performing video checks while editing Using inbuilt transitions,	
	Using colour grading	What is color grading, Examples of color grading, Using filters and presents in color mixing, Applying presents on layers for editing	
	Exporting and rendering	Exporting in different formats, Choosing right formats for exposing, Managing quality while exporting, Rendering and maintain file format, Improving quality and time to render techniques	
5	Adobe Dreamweaver: Web designing software		11

	Introduction to Dreamweaver	Workspace overview Document toolbar, Document window, Panel groups, Files pane, Property inspector, Tag selector Defining website in Dreamweaver	
	Working with DW	Creating Dreamweaver template Page layout in DW CSS layouts: advantages and disadvantages Creating HTML pages, Insert content and form Creating Forms in DW	
	3. Linking pages	Using DW to accomplish basic web page development, Page properties Title, Background image, BG colour, Text colour, Links	
	4. Using Tables	Cell padding, cell spacing, Border Table basics: Colour BG in cell, Invisible tables, Changing span, Making image into clickable link	
	5. Typo in DW	Changing Font typefaces, size, style, colours Text to hyperlink	
	Total		48

LEARNER'S SPACE:

Sr. no.	Project/Assignment	Reason/Justification
01 Print	Preparing a magazine or a series of posters of different size (type of a campaign promotion) using either InDesign or PS or Illustrator	Taking example of magazines or daily newspapers, students can come up with a sample. This will help them be industry ready with a fair hands-on experience.
02 Electronic	Making a short clip with the use of premiere	Making a short video clip with premiere to edit out a short clip (short film/ad/news reel, etc.) Embedding video with Dreamweaver

INNOVATIVE PADEGOGY

Associated with Intro to Photography

Both the soft wares preferred in industry

Both the soft wares preferred in industry

SF Associated with Radio and TV production and DW with Digital media production

RECOMMENDED REFERENCE BOOKS

1. Photoshop Bible, McLeland , Willey Publication
2. Adobe Illustrator Classroom in a book: Adobe House
3. InDesign: Classroom in a book Kelly Kordes and Tina DeJarld Adobe
4. Adobe Premiere Pro: Practical Video Editing
5. Dreamweaver: Web designing made easy: Todd Palamar

RECOMMENDED ICT BACKUP

LIST OF MOOC PROFRAMS

SYLLABI REFERRED FROM

1. Mithibai College
2. Kishinchand Chellaram College
3. Savitribai Phule Pune University

Continuous Evaluation Method:	40 Marks
The objective of internal exercise is to help them identify image and video editing, and apply it to projects. This will ensure the knowledge of the students are up to the industry standards. Also helping them develop their vision to higher aesthetic level. To make students put in practical use the outcome of Film Communication.	
Format	40 Marks
MCQ Test	20 Marks
Assignment - Group project of Short film making (Electronic Media, Suggested Methods)	08 Marks
Group activity- making of magazines, banners posters ,brochures, video clip with 5-6 class members, effects for images	07 Marks
Active participation	5 Marks

To understand the understanding of cinema grasped by the students.
Suggested Screenings:
Documentaries on Famous Film makers – K. Balachander. K. Vishwanath, Adoor etc. Pinjra Apur Sansar/Megha Dhake Tara Sholay/Amar Akbar Anthony Hum Aapke Hai Kaun / Dilwale Dulhaniya Le Jayenge Bajirao Mastani/Manikarnika/Bahubali URI Film

Type of Evaluation	Type of questions	Weightage
Theory:	One class test	37.5 % 20 Marks
Internal (40 Marks)	Assignment/ Project	25 % 07 Marks
	Presentation, Group Discussion, Debates, Content writing, Survey, Case studies, Field visits	25 % 08 Marks
	Active Participation	12.5% 05 Marks
	N.B. 1. All questions are compulsory 2. All units carry equal marks. 3. Attempt any two from each Unit.	
Theory: External (60 marks)	1] Q.1, Q.2 and Q.3 will be full length questions worth 15 marks, with an internal choice. Allocation of questions and the recurrence of questions from a specific module is in accordance to the number of lectures dedicated towards the module, and is thus proportional. 2] Q.4 shall be short notes. Short notes shall be from all units in the subject. Internal choice of writing 5 out of 8 shall be provided.	25% 15 Marks Per Unit

Academic Council dated 10th February 2022 as per Item Number: 3.03



**Dombivli Shikshan Prasarak Mandal's
K.V.Pendharkar College of Arts, Science and Commerce
(Autonomous)
Dombivli (E), Thane 421203**

FACULTY OF SCIENCE

DEPARTMENT OF BOTANY

PROGRAMME: BACHLOR OF SCIENCE (B.Sc.)

S. Y.B.Sc.

Semester III and IV (Paper I, II and III)

Syllabus w.e.f Academic Year 2022-23

Syllabus w.e.f. Academic Year 2022-23 (CBCS)

S.Y.B.Sc. Semester- III

Botany-I

Course Code: PCUSBOIII22-311 Credit: 02.

Unit	PLANT DIVERSITY	Lectures (45)
I	ALGAE AND BRYOPHYTA	15
1.1	General Characters of Division Phaeophyta: Distribution, Cell structure, range of thallus, Economic Importance.	
1.2	Structure, life cycle and systematic position of <i>Sargassum</i>	
1.3	General Account of Class Anthocerotae and Musci	
1.4	Structure, life cycle and systematic position of <i>Anthoceros</i> and <i>Funaria</i>	
II	ANGIOSPERMS	15
2.1	Systematics: Objectives and Goals of Plant systematic 1. Plant Nomenclature 2. Introduction to APG IV system of classification	
2.2	With the help of Bentham and Hooker's system of Classification for flowering plants study the vegetative, floral characters and economic importance of the following families: 1. Capparaceae 2. Rosaceae 3. Asteraceae 4. Amaranthaceae 5. Poaceae	
III	MODERN TECHNIQUES TO PLANT DIVERSITY	15
3.1	Preservation Methods: Wet and Dry method	
3.2	Microscopy – Principle and working of Light Microscope	
3.3	Chromatography- Principle and techniques in paper and thin layer chromatography	
3.4	Principles and techniques of Horizontal and Vertical electrophoresis.	

S.Y.B.Sc	Semester III Theory
<p align="center">Paper I</p> <p align="center">Plant Diversity</p>	<p>Course Outcome</p> <ol style="list-style-type: none"> 1. Algae: Phaeophyta general structure and <i>Sargassum</i> a type genus to study the various stages of the life cycle. 2. Bryophytes: Anthocerotae and Musci with <i>Anthoceros</i> and <i>Funaria</i> as type genera. 3. Detailed study of classification of Psiliophyta and Lepidophyta 4. Study of <i>Selaginella</i>- Systematic position, Life cycle and Alternation of Generations. 5. Introduction to APG IV system of classification 6. Study of families with reference to vegetative, floral characters and plants of economic importance. 7. Various instrumentation techniques such as Microscopy, Chromatography and Electrophoresis <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Detailed study of diversity in algae, bryophyte and its future applications in industry and environment. ➤ Learning the diversity in Pteridophyta. ➤ Students will be aware about new system of plant classification ➤ Students will be well versed with modern techniques to study diversity in plants with reference to various parameters

Botany-II
Course Code: PCUSBOIII22-312 Credit: 02

Unit	FORM AND FUNCTION	Lectures (45)
I	CELL BIOLOGY	15
1.1	Ultra Structure and functions of the following cell organelles: Endoplasmic reticulum: (Smooth and rough) Peroxisomes and Glyoxysomes and Golgi complex	
1.2	Cell Division and its significance Cell Cycle, structure of Interphase Nucleus (nuclear envelop, chromatin network, nucleolus and Nucleoplasm) Concept of Meiosis and its various stages Difference between mitosis and meiosis	
II	CYTOGENETICS	15
2.1	Variation in Chromosome structure (Chromosomal Aberrations) Definition, Origin, Cytological and Genetic Effects of the following: Deletions, Duplications, Inversions and Translocations.	
2.2	Concept of Mutation, Hugo de Vries theory (Mutation theory) Types of mutations: Spontaneous Mutations and Induced Mutations Point Mutations and its types i.e. Missense, Nonsense, Silent and Neutral	
2.3	Extranuclear Genetics Streptomycin resistance in <i>Chlamydomonas</i> Male sterility in maize and Plastid Inheritance in <i>Mirabilis jalapa</i>	
III	MOLECULAR BIOLOGY	15
3.1	DNA replication : Modes of Replication Meselson and Stahl Experiment	
3.2	DNA replication in prokaryotes and eukaryotes: enzymes involved and molecular mechanism of replication	
3.3	Protein Synthesis: Central dogma of Protein synthesis Transcription in prokaryotes and eukaryotes: promoter sites, Initiation, Elongation and Termination.	

S.Y.B.Sc	Semester III Theory
<p align="center">Paper II</p> <p align="center">Form and Function</p>	<p>Course Outcomes:</p> <ol style="list-style-type: none"> 1. Cell Biology Ultrastructure of cell organelles : Endoplasmic reticulum, Golgi complex, peroxisomes and glyoxysomes 2. Concept of cell division with reference to Meiosis 3. Differentiate between mitosis and meiosis 4. Chromosomal aberrations: Structural and numerical 5. Concept of mutation with suitable examples 6. Replication in prokaryotes and eukaryotes 7. Transcription in prokaryotes and eukaryotes <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Will learn about cell organelles and their functions ➤ Understand the concept of meiosis with comparative account with that of mitosis ➤ Will be aware about chromosomal aberrations and their effects ➤ Introduction to mutation and its types ➤ Male sterility and plastid inheritance in <i>Mirabilis jalapa</i> ➤ With comparison they will learn about replication in prokaryotes and eukaryotes as well as process of transcription in prokaryotes and eukaryotes

Botany-III
Course Code: PCUSBOIII22-313 Credit: 02.

Unit	CURRENT TRENDS IN PLANT SCIENCES I	Lectures (45)
I	PHARMACOGNOSY AND NUTRACEUTICAL SCIENCES	15
1.1	Introduction to Indian pharmacopeia	
1.2	Study of monographs from Indian pharmacopeia	
1.3	Study of following Secondary Metabolites Alkaloids, Tannins, Flavonoids and Glycosides with respect to their Sources, Properties and Uses	
1.4	Concept of adulterants with reference to their medicinal uses in following plants, <i>Terminalia arjuna</i> and <i>Terminalia cattapa</i> <i>Bacopa monnieri</i> and <i>Centella asiatica</i> <i>Polyalthia longifolia</i> and <i>Saraca asoka</i>	
1.5	Botanical Nutraceuticals: <i>Spirulina</i> , <i>Vanillin</i> , <i>Garcinia indica</i> and <i>Chlorella</i>	
II	FORESTRY	15
2.1	Concept of forests in India Classification of forests based on average rain fall and flora found in those forests	
2.2	Impact of Reforestation and Deforestation	
2.3	Agro-forestry, Urban forestry, Social forestry	
III	INDUSTRY BASED PLANT PRODUCTS	15
3.1	Economic botany: Fibers: Jute and Cotton Current trends in fibre industries Spices and Condiments: Saffron and Cardamom, Clove Commercial Markets of spices Paper industry: Bamboo, <i>Eucalyptus</i>	
3.2	Plants based enzymes industry: α amylase, Pectinase, Proteases	
3.3	Concept of Biofuels, types of biofuels and its applications	
3.4	Introduction to Aromatherapy, its types and applications	

S.Y.B.Sc	Semester III Theory
Paper III Current Trends in Plant Sciences	Course Outcome <ol style="list-style-type: none"> 1. Analytical techniques learning (microscopy, colorimeter and chromatography). 2. Economic importance of plants with the help of examples of plants yield in terms of fibres, paper and spices. 3. Basic molecular biology concept with respect to DNA, RNA, chromosome and DNA replication. Learner's space: <ul style="list-style-type: none"> ➤ Learning of principles and working of microscopy, colorimetric, Spectrophotometry and Chromatography. Research orientation ➤ Identification and understanding the economic importance of forest products and Spices and condiments. Develop Entrepreneurial skills among the learners ➤ Basic molecular biology concept learning. Research orientation

Sr. No.	SEMESTER III	L	Cr
	PRACTICAL PAPER I: PLANT DIVERSITY PCUSBOIII22-P311	30	1
1	Study of stages in the life cycle of <i>Sargassum</i> from fresh/ preserved sample and permanent slides		
2	Economic importance and range of thallus in Phaeophyta		
3	Study of stages in the life cycle of <i>Anthoceros</i> and <i>Funaria</i> from fresh/ preserved sample and permanent slides		
4	Study of stages in the life cycle of <i>Funaria</i> from fresh/ preserved sample and permanent slides		
7	Study of one plant from each family prescribed for theory: Morphological peculiarities and economic importance of the members of the family		
8	Chromatography: Separation of amino acids by Paper Chromatography		
9	Separation of carotenoids by thin layer chromatography		
10	Electrophoresis: Agarose Gel Electrophoresis demonstration		
	PRACTICAL PAPER II- FORM AND FUNCTION PCUSBOIII22-P312	30	1
1	Study of ultra structure of cell organelles prescribed for theory using photographs		
2	Study of Meiosis from suitable plant material		
3	Estimation of DNA from suitable plant material (One blank and one unknown) Std. value to be provided		
4	Estimation of RNA from suitable plant material (One blank and one unknown) Std. value to be provided		
5	Study of cytological consequences of chromosomal aberrations: Chromosomal laggards, Chromosomal bridge & chromosomal ring		
6	Types of mutations and problems based on mutations		
7	Determining the sequence of amino acids in the protein molecule synthesized from given mRNA stand (Prokaryotic and Eukaryotic)		

Sr. No.	SEMESTER III	L	Cr
	PRACTICAL PAPER III: CURRENT TRENDS IN PLANT SCIENCES PCUSBOIII22-P313	30	1
1	Study of macroscopic, microscopic characters and Qualitative analysis of phytoconstituents of the following: 1. <i>Terminalia arjuna</i> and <i>Terminalia cattapa</i> 2. <i>Bacopa monnieri</i> and <i>Centella asiatica</i> 3. <i>Polyalthia longifolia</i> and <i>Saraca asoka</i>		
2	Identification of botanical Nutraceuticals with the help of photographs(prescribed in theory)		
3	Study of plant diversity (Botanical excursion)		
4	Study of forests types in India (using map)		
5	Plants used in fibre, paper industry and as spices and condiments		

S.Y.B.Sc	Semester III Practical
Practical I Plant Diversity	Course Outcomes: They aim at enhancing the skills of the students learning by doing <ol style="list-style-type: none"> 1. Experiential learning to mount the specimens of <i>Sargassum</i>, <i>Anthoceros</i> and <i>Funaria</i> and learn about the details of the life cycles. 2. Students will study families along with T.S of ovary and L.S. of flower as well as floral formula for the specimen. 3. Separation of DNA using agarose gel electrophoresis Learner's space: <ul style="list-style-type: none"> ➤ Learning the diversity in algae, bryophytes and their future applications ➤ Preparation of herbarium ➤ Well acquainted with electrophoresis technique
Practical II Form and Function	Course Outcome: <ol style="list-style-type: none"> 1. Study of the ultra-structure of cell organelles 2. Learning different stages of meiosis. Staining techniques 3. Study of chromosomal aberrations 4. Study of mutations and its types 5. Study of inheritance pattern in <i>Mirabilis jalapa</i> Learner's space: <ul style="list-style-type: none"> ➤ Understanding the ultra-structure of cell organelles ➤ Learn preparation of smear for meiosis experiment ➤ Will be able to identify type of mutation ➤ Learn to estimate DNA and RNA content using plant sample ➤ Identify prokaryotic and eukaryotic mRNA
Practical III Current Trends in Plant Sciences	Course outcome: <ol style="list-style-type: none"> 1. Macro, microscopic characters as well as quantitative estimation of phytoconstituents 2. Nutraceuticals study 3. Botanical excursion to observe, study and learn plants belonging to various families 4. Different geographical locations in India on the basis of average rain fall 5. Fibers, paper and spices and condiments identification and uses Learner's space: <ul style="list-style-type: none"> ➤ They will learn to identify adulterants ➤ Applications of nutraceuticals ➤ Explore to various plants belonging to different families ➤ Making them aware about different geographical locations in India

S.Y.B.Sc. Semester- IV
Botany-I
Course Code: PCUSBOIV22-411 Credit: 02.

Unit	PLANT DIVERSITY	Lectures (45)
I	MYCOLOGY AND PLANT PATHOLOGY	15
1.1	General characters of Ascomycetae	
1.2	Structure, life cycle and systematic position of <i>Erysiphe</i> and <i>Xylaria</i>	
1.3	Plant pathology: Symptoms, causal organism, disease cycle and control measures of apple scab and leaf spot of turmeric	
II	ANGIOSPERMS AND GYMNOSPERMS	15
2.1	With the help of Bentham and Hooker's system of Classification for flowering plants study the vegetative, floral characters and economic importance of the following families: 1. Umbelliferae 2. Apocynaceae: sub family: Asclepiadaceae 3. Euphorbiaceae 4. Musaceae	
2.2	Structure and life cycle and systematic position of <i>Pinus</i>	
III	PTERIDOPHYTA	15
3.1	Salient features and classification up to orders (with examples of each) of Psiliophyta and Lepidophyta (G.M. Smith's system of classification)	
3.2	Structure and life cycle and systematic position of <i>Selaginella</i>	

S.Y.B.Sc	Semester IV Theory
Paper I Plant Diversity	<p>Course Outcome</p> <ol style="list-style-type: none"> 1. Fungi: Students to learn the classification of Ascomycetae. Life cycle study of <i>Erysiphe</i> and <i>Xylaria</i>. Symbiotic relationships lichen and their ecological significance. 2. Study of fungal diseases 3. Taxonomy of selected plant families along with their plants of economic importance 4. Detailed study of <i>Pinus</i>. 5. Study of life cycle and systematic position of <i>Selaginella</i> <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Learning the diversity in ascomycetes and fungal diseases ➤ Identification of plants on the basis of their morphological characters ➤ Study of gymnosperm, <i>Pinus</i> ➤ Life cycle of <i>Selaginella</i>

Botany-II
Course Code: PCUSBOIV22-412 Credit: 02

Unit	PLANT DIVERSITY	Lectures (45)
I	ANATOMY	15
1.1	Tissues providing mechanical strength and support and their disposition	
1.2	Concept of I-girdles in aerial and underground organs	
1.3	Vascular bundles, its types with suitable examples	
1.4	Concept of normal secondary growth in Dicot stem and dicot root and Mechanical Tissue System	
II	PLANT PHYSIOLOGY	15
2.1	Respiration Aerobic: Glycolysis, TCA cycle and ETS Anaerobic respiration	
2.2	Photorespiration	
2.3	Photoperiodism: Phytochrome response and Vernalization with reference to flowering in higher plants Physico-chemical properties of phytochromes, role of phytochromes in flowering plants of SDPs and LDPs	
2.4	Vernalization: Mechanism and applications	
III	ECOLOGY AND ENVIRONMENTAL BOTANY	15
3.1	Biogeochemical cycles: Carbon, Phosphorus, Sulphur and Water	
3.2	Ecological factors: Concept of environmental factors. Soil as an Edaphic factor, Soil Composition, types of soil formation and soil profile	
3.3	Soil Pollutants- Pesticides and synthetic fertilizers.	

S.Y.B.Sc	Semester IV Theory
Paper II Form and Function	<p>Course Outcome</p> <ol style="list-style-type: none"> 1. Understanding the secondary growth structure and types of vascular bundles of dicot and monocot stem and root. 2. Mechanical tissue system 3. Concept of vascular bundle and its types 4. Physiological cycles such as Glycolysis, ETS and TCA 5. Concept of vernalization 6. Study of biogeochemical cycles such as Carbon, Phosphorus, Sulphur and Water 7. Concept of ecological factors 8. Soil pollutants with reference to synthetic fertilizers <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Knowing the process and need of secondary growth in plant, mechanical tissue system and vascular bundles functions in plants ➤ Understand various physiological and biogeochemical cycles ➤ Understand ecological factors and their applications ➤ Use of soil pollutants in relation with pesticides

Botany-III
Course Code: PCUSBOIV22-413 Credit: 02.

Unit	CURRENT TRENDS IN PLANT SCIENCES I	Lectures (45)
I	HORTICULTURE	15
1.1	Locations in garden: Edges, Hedges, Lawn, Avenues, Flower beds, Water garden (with names of two plants for each category)	
1.2	Focal Point	
1.3	Types of gardens Formal garden Informal garden	
1.4	Sanjay Gandhi National Park Veer Mata Jijabai Udyan (Victoria Garden)	
II	PLANT BIOTECHNOLOGY	15
2.1	Agricultural Biotechnology: History and present status in India	
2.2	Recombinant DNA Technology: Concept of gene cloning Enzymes involved in gene cloning: Restriction Endonucleases Study of vectors: Plasmid vectors pBR-322, and pUC-18 Plant based vector: Ti- Plasmid	
2.3	Applications with reference to Crop Modification (Genetically Modified Crops), agro food, Commercialization, rules and regulations under government act Status of GM crops with respect to Indian scenario	
III	BIOSTATISTICS AND BIOINFORMATICS	15
3.1	Coefficient of correlation, its types and problems based on coefficient of correlation	
3.2	Concept of Chi-square test and problems based on Chi-square test	
3.3	Introduction to bioinformatics, goals, need, scope and limitations	
3.4	Introduction to NCBI with respect to BLAST and its types	

S.Y.B.Sc	Semester IV Theory
<p>Paper III</p> <p>Current Trends in Plant Sciences</p>	<p>Course Outcome:</p> <ol style="list-style-type: none"> 1. Concept of horticulture and its branches 2. Study of various garden locations with suitable examples 3. Indian scenario of agricultural biotechnology 4. Study of R-DNA technology 5. Applications of agricultural biotechnology with reference to GM crops 6. Biostatistics -Testing of hypothesis - Chi Square Test 7. Coefficient of correlation. Theory and Problems based on these concepts 8. Study of Bioinformatics with respect to Internet, Databases, Software tools, Concept of BLAST <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Role of horticulture in various fields ➤ Understanding of R-DNA technology ➤ Identification of common vectors ➤ Use of bioinformatics to study BLAST

Sr. No.	SEMESTER IV	L	Cr
	PRACTICAL PAPER I: PLANT DIVERSITY I PCUSBOIV22-P411	30	1
1	Study of stages in the life cycle of <i>Erysiphe</i> from fresh/ preserved material and permanent slides		
2	Study of stages in the life cycle of <i>Xylaria</i> from fresh/ preserved material and permanent slides		
3	Study of fungal diseases prescribed in theory		
4	Study of stages in the life cycle of <i>Selaginella</i> from fresh/ preserved material and permanent slides		
5	Study of stages in the life cycle of <i>Pinus</i> from fresh/ preserved material and permanent slides		
6	Study of one plant from each family prescribed for theory: Morphological peculiarities and economic importance of the members of the family		
	PRACTICAL PAPER II- FORM AND FUNCTION I PCUSBOIV22-P412	30	1
1	Study of normal secondary growth in the stem and root of dicot plant (<i>Helianthus annuus</i>)		
2	Types of mechanical tissues, mechanical tissue system in aerial, underground organs.		
3	Study of conducting tissues- Xylem and phloem elements in Gymnosperms and Angiosperms as seen in L.S. and through maceration technique.		
4	Study of different types of vascular bundles with the help of permanent slides or photographs		
5	Q ₁₀ – germinating seeds using Phenol red indicator		
6	Comparative account of chlorophyll content in young & adult leaves		
7	Study of working of following ecological instruments 1. Soil thermometer 2. pH meter 3. Soil testing kit 4. Wind anemometer		
8	Quantitative estimation of organic matter of the soil by Walkley and Blacks Rapid titration method.		
9	Mechanical analysis of soil by the sieve method		
10	Study of water holding capacity of different soil samples.		

Sr. No.	SEMESTER IV		Cr
	PRACTICAL PAPER III: CURRENT TRENDS IN PLANT SCIENCES I PCUSBOIV22-P413	30	1
1	Study of three to five examples of plants for each of the garden locations as prescribed for theory.		
2	Preparation of garden plans – Formal and Informal gardens		
3	Bottle and dish garden preparation		
4	Isolation of pure culture by streaking method		
5	Measurement of microbial growth by turbidometry methods.		
6	Effect of temperature, pH and carbon and nitrogen sources on microbial growth.		
7	Identification of the cloning vectors with the help of photographs pBR322, pUC 18 and Ti-plasmid		
8	Problems based on Coefficient of correlation		
9	Problems based on Chi-Square Test		
10	Demonstration of BLAST		

S.Y.B.Sc	Semester IV Practical
Practical I Plant Diversity	Course Outcomes: Skill development plant identification in field <ol style="list-style-type: none"> 1. Slide preparation of <i>Xylaria</i> and <i>Erysiphe</i> 2. Slide preparation of <i>Selaginella</i>, <i>Pinus</i>. 3. Study of inflorescence, flower morphology and functional modifications of floral whorls. 4. Study of families and plants of economic importance Learner's space: <ul style="list-style-type: none"> ➤ Learning the diversity and stages of life cycle in Fungi, Pteridophyta and Gymnosperms ➤ Study of plant diseases ➤ Detailed study of morphology of flowers and some angiosperms. families.
Practical II Form and Function	Course outcome: <ol style="list-style-type: none"> 1. Exploring the normal secondary growth in the dicot stem and root 2. Study of different types of vascular bundles and conducting tissues- Xylem and phloem elements in Gymnosperms and Angiosperms. 3. Analysis of soil by the sieve method & pH of soil and water holding capacity of different soil samples. 4. Quantitative estimation of organic matter of the soil by Walkley and Black's Rapid titration method. (Industrial application) 5. Study of vegetation by the list quadrant method. 6. Study of different ecological instruments. 7. Study of water holding capacity of soil Learner's space: <ul style="list-style-type: none"> ➤ Knowing the reason of secondary growth, mechanical tissue system and vascular bundles functions in plant. ➤ Study of Ecological factors and assessment of soil pH, water holding capacity of the soil ➤ Applications of various ecological instruments
Practical III Current Trends in Plant Sciences	Course outcome: Skill Development: <ol style="list-style-type: none"> 1. Preparation of Bottle and dish garden and study of five examples of plants for each of the garden locations

	<ol style="list-style-type: none"> 2. Study of pBR322, pUC 18, Ti plasmid 3. Learn concept of aseptic techniques, streak plate method 4. Quantitative estimation of microbial growth 5. Data analysis using Chi square test 6. Coefficient of correlation between two variables 7. Concept of BLAST <p>Learner's space:</p> <ul style="list-style-type: none"> ➤ Designing of gardens and application of horticulture (Entrepreneurship). ➤ Identification of the cloning vectors – pBR322, pUC 18, Ti plasmid. ➤ Understanding the various methods used in microbiology ➤ Use of BLAST for data retrieval
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EVALUATION PATTERN

Type of evaluation	Type of questions	Weightage
Theory: Internal (40%)	One class test (Multiple choice questions)	20 marks
	Assignment with oral presentation	20 marks
Theory: External (60%)	Long answer questions (Unit wise)	45 marks
	Short notes	15 marks
Practicals	Preparation, Presentations, Performing Observations, Calculations, Conclusions, Results, Viva, Field report and Journal	50 marks (each paper)

Proposed Evaluation Scheme (In detail)
S.Y.B.Sc. Botany (Theory)

1.	INTERNAL ASSESSMENT	40 Marks
1.1	One class test (Objective/ Multiple choice questions)	20 Marks
1.2	Assignment with oral presentation	20 Marks
2.	EXTERNAL ASSESSMENT (Semester End Examination)	60 Marks
	N.B. 1. All questions are compulsory 2. All questions carry equal marks. 3. Draw neat and labelled diagrams wherever necessary	
	Q1. Attempt any two of the following a b c d	15 Marks
	Q2. Attempt any two of the following a b c d	15 Marks
	Q3. Attempt any two of the following a b c d	15 Marks
	Q4. Attempt any three of the following a b c d e f	15 Marks

Evaluation Pattern
F.Y.B.Sc. Botany Practical Examination (Both semesters)

1.	Practical Paper I (Experiments + Viva + Journal)	50 Marks
2.	Practical Paper II (Experiments + Viva + Journal + Field report)	50 Marks

**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND COMMERCE,
DOMBIVLI (EAST), DIST. THANE (AUTONOMOUS)**

Affiliated to University of Mumbai

Faculty of Sciences

DEPARTMENT OF COMPUTER SCIENCE

**Program: Bachelor of Science
PROPOSED SYLLABUS FOR:**

S.Y.B.Sc. (Semester III and IV)

**Course: Computer Science
With effect from 2022-2023**

Credit Based Semester and Grading System

SEMESTER III			
Course	TOPICS	Credits	L / Week
USCS301	Theory of Computation	2	3
USCS302	Core JAVA	2	3
USCS303	Operating System	2	3
USCS304	Database Management Systems	2	3
USCS305	Combinatorics and Graph Theory	2	3
USCS306	Physical Computing and IoT Programming	2	3
USCS307	Skill Enhancement: Web Programming	2	3
USCSP301	USCS302+USCS303+USCS304	3	9
USCSP302	USCS305+USCS306+USCS307	3	9

SEMESTER IV			
Course	TOPICS	Credits	L / Week
USCS401	Fundamentals of Algorithms	2	3
USCS402	Advanced JAVA	2	3
USCS403	Computer Networks	2	3
USCS404	Software Engineering	2	3
USCS405	Linear Algebra using Python	2	3
USCS406	.NET Technologies	2	3
USCS407	Skill Enhancement: Android Developer Fundamentals	2	3
USCSP401	USCS401+ USCS402+ USCS403	3	9
USCSP402	USCS405+ USCS406+ USCS407	3	9

SEMESTER III

THEORY

Course: USCS301	TOPICS (Credits : 02 Lectures/Week:03) Theory of Computation			
Objectives: To provide comprehensive insight into theory of computation by understanding grammar, languages and other elements of modern language design. Also to develop capabilities to design and develop formulations for computing models and identify its applications in diverse areas. Expected Learning Outcomes: 1. Understand Grammar and Languages 2. Learn about Automata theory and its application in Language Design 3. Learn about Turing Machines and Pushdown Automata 4. Understand Linear Bound Automata and its applications				
Unit	OLD Syllabus	New Syllabus	Justification	Lectures
Unit I	Automata Theory: Defining Automaton, Finite Automaton, Transitions and Its properties, Acceptability by Finite Automaton, Nondeterministic Finite State Machines, DFA and NDFA equivalence, Mealy and Moore Machines, Minimizing Automata. Formal Languages: Defining Grammar, Derivations, Languages generated by Grammar, Chomsky Classification of Grammar and Languages, Recursive Enumerable Sets, Operations	Automata Theory: Defining Automaton, Finite Automaton, Transitions and Its properties, Acceptability by Finite Automaton, Nondeterministic Finite State Machines, DFA and NDFA equivalence, Mealy and Moore Machines, Minimizing Automata. Formal Languages: Defining Grammar, Derivations, Languages generated by Grammar, Chomsky Classification of Grammar and Languages, Recursive	No changes	15L

	on Languages, Languages and Automata	Enumerable Sets, Operations on Languages, Languages and Automata		
Unit II	<p>Regular Sets and Regular Grammar: Regular Grammar, Regular Expressions, Finite automata and Regular Expressions, Pumping Lemma and its Applications, Closure Properties, Regular Sets and Regular Grammar</p> <p>Context Free Languages: Context-free Languages, Derivation Tree, Ambiguity of Grammar, CFG simplification, Normal Forms, Pumping Lemma for CFG</p> <p>Pushdown Automata: Definitions, Acceptance by PDA, PDA and CFG</p>	<p>Regular Sets and Regular Grammar: Regular Grammar, Regular Expressions, Finite automata and Regular Expressions, Pumping Lemma and its Applications, Closure Properties, Regular Sets and Regular Grammar</p> <p>Context Free Languages: Context-free Languages, Derivation Tree, Ambiguity of Grammar, CFG simplification, Normal Forms, Pumping Lemma for CFG</p> <p>Pushdown Automata: Definitions, Acceptance by PDA, PDA and CFG</p>	No Changes	15L
Unit III	<p>Linear Bound Automata: The Linear Bound Automata Model, Linear Bound Automata and Languages.</p> <p>Turing Machines: Turing Machine Definition, Representations, Acceptability by Turing Machines, Designing and Description of Turing Machines, Turing Machine Construction, Variants of Turing Machine,</p> <p>Undecidability: The</p>	<p>Linear Bound Automata: The Linear Bound Automata Model, Linear Bound Automata and Languages.</p> <p>Turing Machines: Turing Machine Definition, Representations, Acceptability by Turing Machines, Designing and Description of Turing Machines, Turing Machine Construction, Variants of Turing Machine,</p> <p>Model of Linear Bounded</p>	Added new topic in Turing Machine chapter so student will understand relation of both concept	15L

	Church-Turing thesis, Universal Turing Machine, Halting Problem, Introduction to Unsolvability Problems	Automata and Context Sensitive Language Undecidability: The Church-Turing thesis, Universal Turing Machine, Halting Problem, Introduction to Unsolvability Problems		
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Tutorials :

1. Problems on generating languages for given simple grammar
2. Problems on DFA and NFA equivalence
3. Problems on generating Regular Expressions
4. Problems on drawing transition state diagrams for Regular Expressions
5. Problems on Regular Sets and Regular Grammar
6. Problems on Ambiguity of Grammar
7. Problems on working with PDA
8. Problems on working with Turing Machines
9. Problems on generating derivation trees
10. Problems on Linear Bound Automata/Universal Turing Machine

Textbook(s):

- 1) Theory of Computer Science, K. L. P Mishra, Chandrasekharan, PHI, 3rd Edition
- 2) Introduction to Computer Theory, Daniel Cohen, Wiley, 2nd Edition
- 3) Introductory Theory of Computer Science, E.V. Krishnamurthy, Affiliated East-West Press.

Additional Reference(s):

- 1) Theory of Computation, Kavi Mahesh, Wiley India
- 2) Elements of The Theory of Computation, Lewis, Papadimitriou, PHI
- 3) Introduction to Languages and the Theory of Computation, John E Martin, McGraw-Hill Education
- 4) Introduction to Theory of Computation, Michel Sipser, Thomson

Pedagogy:

Theory of Computation is of core significance in any Computer Science curriculum. It holds a great deal of importance in laying basis for various computer science applied areas such as Compiler Construction, Text processing, Hardware Design and Artificial Intelligence.

For teaching we have used PPT demonstrations and Practice of different algorithms.

ICT Ref.:

1. https://www.tutorialspoint.com/automata_theory/index.htm
2. <https://www.geeksforgeeks.org/theory-of-computation-automata-tutorials/>
3. <https://www.javatpoint.com/automata-tutorial>

MOOC Courses:

1. https://onlinecourses.nptel.ac.in/noc21_cs83/preview

Course: USCS302	TOPICS (Credits : 02 Lectures/Week:03) Core Java			
Objectives: The objective of this course is to teach the learner how to use Object Oriented paradigm to develop code and understand the concepts of Core Java and to cover-up with the prerequisites of Core java. Expected				
Learning Outcomes: 1. Object oriented programming concepts using Java. 2. Knowledge of input, its processing and getting suitable output. 3. Understand, design, implement and evaluate classes and applets. 4. Knowledge and implementation of AWT package.				
Unit	Old Syllabus	New Syllabus	Justification	No.Of Lectures
Unit I	The Java Language: Features of Java, Java programming format, Java Tokens, Java Statements, Java Data Types, Typecasting, Arrays OOPS: Introduction, Class, Object, Static Keywords, Constructors, this Keyword, Inheritance, super Keyword, Polymorphism (overloading and overriding), Abstraction, Encapsulation, Abstract Classes, Interfaces. String Manipulations:	The Java Language: Features of Java, Java programming format, Difference between Java and C language, Differences between JDK, JRE and JVM, Java Tokens, Java Statements, Java Data Types, Typecasting, Arrays OOPS: Introduction, Class, Object, Static Keywords, Constructors, this Keyword, Inheritance, super Keyword, Polymorphism (overloading and overriding), Abstraction, Encapsulation, Static and Dynamic Binding, Abstract Classes, Interfaces. String Manipulations: String,	Addition: Get Detail information between C-Programming and Java. Adding information about JVM Architecture. Information about static and late binding in	15L

	String, String Buffer, String Tokenizer Packages: Introduction to predefined packages (java.lang, java.util, java.io, java.sql, java.swing), User Defined Packages, Access specifiers	String Buffer, String Tokenizer Packages: Introduction to predefined packages (java.lang, java.util, java.io, java.sql, java.swing), User Defined Packages, Access specifiers	oops concept	
Unit II	Exception Handling: Introduction, Pre-Defined Exceptions, Try-Catch-Finally, Throws, throw, User Defined Exception examples Multithreading: Thread Creations, Thread Life Cycle, Life Cycle Methods, Synchronization, Wait() notify() notify all() methods I/O Streams: Introduction, Byte-oriented streams, Character- oriented streams, File, Random access File, Serialization Networking: Introduction, Socket, Server socket, Client–Server Communication	Exception Handling: Introduction, Pre-Defined Exceptions, Try-Catch-Finally, Throws, throw, User Defined Exception examples Multithreading: Thread Creations, Thread Life Cycle, Life Cycle Methods, Synchronization, Wait() notify() notify all() methods I/O Streams: Introduction, Byte-oriented streams, Character-oriented streams, File, Random access File, Serialization Networking: Introduction, Socket, Server socket, Client–Server Communication	No Change	15L

<p>Unit III</p>	<p>Wrapper Classes: Introduction, Byte, Short, Integer, Long, Float, Double, Character, Boolean classes</p> <p>Collection Framework: Introduction, util Package interfaces, List, Set, Map, List interface & its classes, Set interface & its classes, Map interface & its classes</p> <p>Inner Classes: Introduction, Member inner class, Static inner class, Local inner class, Anonymous inner class</p> <p>AWT: Introduction, Components, Event-Delegation-Model, Listeners, Layouts, Individual components Label, Button, CheckBox, Radio Button, Choice, List, Menu, Text Field, Text Area</p>	<p>Wrapper Classes: Introduction, Byte, Short, Integer, Long, Float, Double, Character, Boolean classes</p> <p>Collection Framework: Introduction, util Package interfaces, List, Set, Map, List interface & its classes, Set interface & its classes, Map interface & its classes</p> <p>Inner Classes: Introduction, Member inner class, Static inner class, Local inner class, Anonymous inner class.</p> <p>AWT: Introduction, Components, Event-Delegation-Model, Event and Listener, Layouts, Individual components Label, Button, Checkbox, Radio Button, Choice, List, Menu, Text Field, Text Area.</p>	<p>Adding Event Class in details</p>	<p>15L</p>
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Textbook(s):

- 1) Herbert Schildt, Java The Complete Reference, Ninth Edition, McGraw-Hill Education, 2014

Additional Reference(s):

- 1) E. Balagurusamy, Programming with Java, Tata McGraw-Hill Education India, 2014
- 2) Programming in JAVA, 2nd Ed, Sachin Malhotra & Saurabh Choudhary, Oxford Press
- 3) The Java Tutorials: <http://docs.oracle.com/javase/tutorial/>

Pedagogy: -

With this paper student will be exposed to object-oriented programming language that is used very widely in the industry. While teaching programming algorithm, program writing can be related with our day today instruction sets.

Projected demo with hands-on will make concept more clear. Our traditional teaching can be associated with presentations.

To check their understanding assignments can be taken for debugging & output tracing.

ICT Ref.: -

1. <https://www.w3schools.com/java/>
2. <https://www.tutorialspoint.com/java/index.htm>
3. <https://www.studytonight.com/java/>
4. <https://www.javatpoint.com/java-tutorial>

MOOC Courses:

1. https://onlinecourses.nptel.ac.in/noc21_cs56/preview

Course: USCS303	TOPICS (Credits : 02 Lectures/Week:03) Operating System			
Objectives: Learners must understand proper working of operating systems. To provide a sound understanding of the Computer operating system, its structures, functioning and algorithms.				
Expected Learning Outcomes: 1. To provide a understanding of operating system, its structures and functioning 2. Develop and master understanding of algorithms used by operating systems for various purposes.				
Unit	Old Syllabus	New Syllabus	Justification	Lectures
Unit I	Introduction and Operating-Systems Structures: Definition of Operating system, Operating System’s role, Operating-System Operations, Functions of Operating System, Computing Environments Operating-System Structures: Operating-System Services, User and Operating-System Interface, System Calls, Types of System Calls, Operating-System Structure Processes: Process Concept, Process Scheduling, Operations on Processes, Interprocess Communication	Introduction and Operating-Systems Structures: Definition of Operating system, Operating System’s role, Operating-System Operations, Functions of Operating System, Computing Environments Operating-System Structures: Operating-System Services, User and Operating-System Interface, System Calls, Types of System Calls, Operating-System Structure Processes: Process Concept, Process Scheduling, Operations on Processes, Interprocess Communication	No Change	15L

	Threads: Overview, Multicore Programming, Multithreading Models	Threads: Overview, Multicore Programming, Multithreading Models , Thread Scheduling .		
Unit II	<p>Process Synchronization: General structure of a typical process, race condition, The Critical-Section Problem, Peterson's Solution, Synchronization Hardware, Mutex Locks, Semaphores, Classic Problems of Synchronization, Monitors</p> <p>CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms (FCFS, SJF, SRTF, Priority, RR, Multilevel Queue Scheduling, Multilevel Feedback Queue Scheduling), Thread Scheduling</p> <p>Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock</p>	<p>Process Synchronization: General structure of a typical process, race condition, The Critical-Section Problem, Peterson's Solution, Synchronization Hardware, Mutex Locks, Semaphores, Classic Problems of Synchronization, Monitors</p> <p>CPU Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms (FCFS, SJF, SRTF, Priority, RR, Multilevel Queue Scheduling, Multilevel Feedback Queue Scheduling), Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock</p>	Deletion: Thread Scheduling.	15L

<p>Unit III</p>	<p>Main Memory: Background, Logical address space, Physical address space, MMU, Swapping, Contiguous Memory Allocation, Segmentation, Paging, Structure of the Page Table</p> <p>Virtual Memory: Background, Demand Paging, Copy-on-Write, Page Replacement, Allocation of Frames, Thrashing</p> <p>Mass-Storage Structure: Overview, Disk Structure, Disk Scheduling, Disk Management</p> <p>File-System Interface: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting, File Sharing</p> <p>File-System Implementation: File-System Structure, File-System Implementation, Directory Implementation, Allocation Methods, Free-Space Management</p>	<p>Main Memory: Background, Logical address space, Physical address space, MMU, Swapping, Contiguous Memory Allocation, Segmentation, Paging, Structure of the Page Table</p> <p>Virtual Memory: Background, Demand Paging, Copy-on-Write, Page Replacement, Allocation of Frames, Thrashing</p> <p>Mass-Storage Structure: Overview, Disk Structure, Disk Scheduling, Disk Management</p> <p>File-System Interface: File Concept, Access Methods, Directory and Disk Structure, File-System Mounting, File Sharing</p> <p>File-System Implementation: File-System Structure, File-System Implementation, Directory Implementation, Allocation Methods, Free-Space Management</p>	<p>No Change</p>	<p>15L</p>
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Textbook(s):

1. Abraham Silberschatz, Peter Galvin, Greg Gagne, Operating System Concepts, Wiley, 8th Edition

Additional Reference(s):

1. Achyut S. Godbole, Atul Kahate, Operating Systems, Tata McGraw Hill
2. Naresh Chauhan, Principles of Operating Systems, Oxford Press
3. Andrew S Tanenbaum, Herbert Bos, Modern Operating Systems, 4e Fourth Edition, Pearson Education, 2016

Pedagogy: -

The course is organized such that a student with a basic background in programming and computer organization can follow the implementation road map available online, and build the OS from scratch on her personal machine/laptop, with minimal instructional supervision.

- 1) Study the basic concepts and functions of operating systems.
- 2) Understand the structure and functions of OS.
- 3) Learn about Processes, Threads and Scheduling algorithms.
- 4) Understand the principles of concurrency and Deadlocks.
- 5) Learn various memory management schemes.
- 6) Study I/O management and File systems.
- 5) Learn the basics of Linux system and perform administrative tasks on Linux Servers

ICT Ref.: -

1. <https://www.javatpoint.com/os-tutorial>
2. https://www.tutorialspoint.com/operating_system/index.htm
3. <https://www.studytonight.com/operating-system/>

MOOC Courses:

1. https://onlinecourses.nptel.ac.in/noc21_cs72/preview
2. https://onlinecourses.swayam2.ac.in/cec21_cs20/preview

Course: USCS304	TOPICS (Credits : 02 Lectures/Week:03) Database Management Systems			
Objectives: To develop understanding of concepts and techniques for data management and learn about widely used systems for implementation and usage. Expected Learning Outcomes: 1. Learn about using PL/SQL for data management 2. Master concepts of stored procedure and triggers and its use. 3. Understand concepts and implementations of transaction management and crash recovery				
Unit	Old Syllabus	New Syllabus	Justification	No.Of lectures
Unit I	Stored Procedures: Types and benefits of stored procedures, creating stored procedures, executing stored procedures, altering stored procedures, viewing stored procedures. Triggers: Concept of triggers, implementing triggers – creating triggers, Insert, delete, and update triggers, nested triggers, viewing, deleting and modifying triggers, and enforcing data integrity through triggers. Sequences: creating sequences, referencing, altering and dropping a sequence. File Organization and Indexing: Cluster, Primary and secondary indexing, Index data structure: hash and Tree based indexing, Comparison of file organization: cost model,	Fundamentals of PL/SQL: Defining variables and constants, PL/SQL expressions and comparisons: Logical Operators, Boolean Expressions, CASE Expressions Handling, Null Values in Comparisons and Conditional Statements, PL/SQL Datatypes: Number Types, Character Types, Boolean Type, Date time and Interval Types. Overview of PL/SQL Control Structures: Conditional Control: IF and CASE Statements, IF-THEN Statement, IF-THEN-ELSE Statement, IF THEN-ELSEIF Statement, CASE Statement, Iterative Control: LOOP and EXIT Statements, WHILE-LOOP, FOR-LOOP, Sequential Control: GOTO and NULL Statements. Sequences: creating sequences, referencing, altering and dropping a sequence. Cursors: Concept of a cursor, types	Addition: Fundamentals of PL/SQL and Overview of PL/SQL Control Structure is shifted from Unit II to Unit I for basic information about PL/SQL. Information about Cursor in PL/SQL	15L

	Heap files, sorted files, clustered files. Creating, dropping and maintaining indexes.	of cursors: implicit cursors, explicit cursor, Cursor for loops, Cursor variables, parameterized cursors, nested cursors, FOR UPDATE Clause and WHERE CURRENT Clause		
Unit II	<p>Fundamentals of PL/SQL: Defining variables and constants, PL/SQL expressions and comparisons: Logical Operators, Boolean Expressions, CASE Expressions Handling, Null Values in Comparisons and Conditional Statements, PL/SQL Datatypes: Number Types, Character Types, Boolean Type, Date time and Interval Types.</p> <p>Overview of PL/SQL Control Structures: Conditional Control: IF and CASE Statements, IF-THEN Statement, IF-THEN-ELSE Statement, IF THEN-ELSEIF Statement, CASE Statement, Iterative Control: LOOP and EXIT Statements, WHILE-LOOP, FOR-LOOP, Sequential Control: GOTO and NULL Statements</p>	<p>Stored Procedures: Types and benefits of stored procedures, creating stored procedures, executing stored procedures, altering stored procedures, viewing stored procedures.</p> <p>Triggers: Concept of triggers, implementing triggers – creating triggers, Insert, delete, and update triggers, nested triggers, viewing, deleting and modifying triggers, and enforcing data integrity through triggers.</p> <p>File Organization and Indexing: Cluster, Primary and secondary indexing, Index data structure: hash and Tree based indexing, Comparison of file organization: cost model, Heap files, sorted files, clustered files. Creating, dropping and maintaining indexes.</p>	<p>Addition: Stored Procedures, Triggers and File Organization is shifted from Unit I to Unit II for advance information about PL/SQL.</p>	15L

<p>Unit III</p>	<p>Transaction Management: ACID Properties, Serializability, Two-phase Commit Protocol, Concurrency Control, Lock Management, Lost Update Problem, Inconsistent Read Problem, Read-Write Locks, Deadlocks Handling, Two Phase Locking protocol.</p> <p>DCL Statements: Defining a transaction, Making Changes Permanent with COMMIT, Undoing Changes with ROLLBACK, Undoing Partial Changes with SAVEPOINT and ROLLBACK</p> <p>Crash Recovery: ARIES algorithm. The log based recovery, recovery related structures like transaction and dirty page table, Write-ahead log protocol, check points, recovery from a system crash, Redo and Undo phases.</p>	<p>Transaction Management: ACID Properties, Serializability, Two-phase Commit Protocol, Concurrency Control, Lock Management, Lost Update Problem, Inconsistent Read Problem, Read-Write Locks, Deadlocks Handling, Two Phase Locking protocol.</p> <p>DCL Statements: Defining a transaction, Making Changes Permanent with COMMIT, Undoing Changes with ROLLBACK, Undoing Partial Changes with SAVEPOINT and ROLLBACK</p> <p>Crash Recovery: ARIES algorithm. The log based recovery, recovery related structures like transaction and dirty page table, Write-ahead log protocol, check points, recovery from a system crash, Redo and Undo phases.</p>	<p>No Change</p>	<p>15L</p>
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Textbook(s):

- 1) Ramakrishnam, Gehrke, Database Management Systems, Bayross, McGraw - Hill, 3rd Edition
- 2) Abraham Silberschatz, Henry F. Korth, S. Sudarshan, Database System Concepts, 6th Edition
- 3) Ivan Bayross, "SQL, PL/SQL - The Programming language of Oracle", B.P.B. Publications

Additional Reference(s):

- 1) Ramez Elmasri & Shamkant B. Navathe, Fundamentals of Database Systems, Pearson Education
- 2) Robert Sheldon, Geoff Moes, Beginning MySQL, Wrox Press.
- 3) Joel Murach, Murach's MySQL, Murach

Pedagogy: -

Database management courses are an essential part of computer science curricula in educational institutions. Courses are normally well-designed, however, in order for students to better understand the theoretical concepts, hands-on practical sessions are also necessary. Such practice will help students to meet the challenges of job market and working in the industry. This paper suggests that group projects be used as a tool to make the teaching and learning of the subject area, more effective.

ICT Ref.: -

1. <https://www.tutorialspoint.com/dbms/index.htm>
2. <https://beginnersbook.com/2015/04/dbms-tutorial/>
3. <https://www.studytonight.com/dbms/>
4. <https://www.javatpoint.com/dbms-tutorial>

MOOC Courses:

1. https://onlinecourses.nptel.ac.in/noc21_cs58/preview

Course: USCS305	TOPICS (Credits : 02 Lectures/Week: 03) Combinatorics and Graph Theory	
<p>Objectives:</p> <p>To give the learner a broad exposure of combinatorial Mathematics through applications especially the Computer Science applications.</p> <p>Expected Learning Outcomes:</p> <ol style="list-style-type: none"> 1. Appreciate the beauty of combinatorics and how combinatorial problems naturally arise in many settings. 2. Understand the combinatorial features in real world situations and Computer Science applications. 3. Apply combinatorial and graph theoretical concepts to understand Computer Science concepts and apply them to solve problems 		

Unit	Old Syllabus	New Syllabus	Justification	No. of Lectures
Unit I	<p>Introduction to Combinatorics: Enumeration, Combinatorics and Graph Theory/ Number Theory/Geometry and Optimization, Sudoku Puzzles.</p> <p>Strings, Sets, and Binomial Coefficients: Strings- A First Look, Combinations, Combinatorial, The Ubiquitous Nature of Binomial Coefficients, The Binomial, Multinomial Coefficients.</p> <p>Induction: Introduction, The Positive Integers are Well Ordered, The Meaning of Statements, Binomial Coefficients Revisited, Solving Combinatorial Problems Recursively, Mathematical Induction, and Inductive Definitions Proofs by</p>	<p>Introduction to Combinatorics: Enumeration, Combinatorics and Graph Theory/ Number Theory/Geometry and Optimization, Sudoku Puzzles.</p> <p>Strings, Sets, and Binomial Coefficients: Strings- A First Look, Combinations, Combinatorial, The Ubiquitous Nature of Binomial Coefficients, The Binomial, Multinomial Coefficients.</p> <p>Induction: Introduction, The Positive Integers are Well Ordered, The Meaning of Statements, Binomial Coefficients Revisited, Solving Combinatorial Problems Recursively, Mathematical Induction, and Inductive Definitions Proofs by</p>		15L

	Induction. Strong Induction	Induction. Strong Induction		
Unit II	<p>Graph Theory: Basic Notation and Terminology, Multigraphs: Loops and Multiple Edges, Eulerian and Hamiltonian Graphs, Graph Coloring, Planar Counting, Labeled Trees, A Digression into Complexity Theory. Applying Probability to Combinatorics, Small Ramsey Numbers, Estimating Ramsey Numbers, Applying Probability to Ramsey Theory, Ramsey's Theorem The Probabilistic Method</p>	<p>Graph Theory: Basic Notation and Terminology, Multigraphs: Loops and Multiple Edges, Eulerian and Hamiltonian Graphs, Graph Coloring, Planar Counting, Labeled Trees,</p> <p>Trees: Minimum Spanning Tree, MST by Prims algorithm, Kruskal's algorithm and Dijkstra's algorithm. Expression Tree: Writing Mathematical expressions for a tree by different types of expression formats: Prefix expression, Infix expression and Postfix expression</p> <p>A Digression into Complexity Theory. Applying Probability to Combinatorics, Small Ramsey Numbers, Estimating Ramsey Numbers, Applying Probability to Ramsey Theory, Ramsey's Theorem The Probabilistic Method</p>	<p>Addition: Get a detailed idea about trees in graph theory.</p>	15L
Unit III	<p>Network Flows: Basic Notation and Terminology, Flows and Cuts, Augmenting Paths, The Ford-Fulkerson Labeling Algorithm, A Concrete Example, Integer Solutions of Linear Programming Problems. Combinatorial Applications of Network Flows: Introduction, Matching in Bipartite Graphs, Chain partitioning, Pólya's Enumeration Theorem: Coloring the Vertices of a Square.</p>	<p>Network Flows: Basic Notation and Terminology, Flows and Cuts, Augmenting Paths, The Ford-Fulkerson Labeling Algorithm, A Concrete Example, Integer Solutions of Linear Programming Problems. Combinatorial Applications of Network Flows: Introduction, Matching in Bipartite Graphs, Chain partitioning, Pólya's Enumeration Theorem: Coloring the Vertices of a Square.</p>		15L

Textbook(s):

- 1) Applied Combinatorics, Mitchel T. Keller and William T. Trotter, 2016,
<http://www.rellek.net/appcomb>.

Additional Reference(s):

- 1) Applied Combinatorics, sixth.edition, Alan Tucker, Wiley; (2016)
- 2) Graph Theory and Combinatorics, Ralph P. Grimaldi, Pearson Education; Fifth edition (2012)
- 3) Combinatorics and Graph Theory, John Harris, Jeffry L. Hirst, Springer(2010).
- 4) Graph Theory: Modeling, Applications and Algorithms, Agnarsson, Pearson Education India (2008).

Pedagogy: -

The purpose of the course is to familiarize the prospective learners with mathematical structures that are fundamentally graph. Traditional teaching can be associated with some PPT sessions or YouTube videos.

ICT Ref.: -

1. https://www.tutorialspoint.com/graph_theory/index.htm
2. <https://www.javatpoint.com/graph-theory-tutorial>

Course: USCS306	TOPICS (Credits : 02 Lectures/Week:03) Physical Computing and IoT Programming
Objectives: To learn about SoC architectures; Learn how Raspberry Pi. Learn to program Raspberry Pi. Implementation of the Internet of Things and Protocols. Expected Learning Outcomes: <ol style="list-style-type: none"> 1. Enable learners to understand System On Chip Architectures. 2. Introduction and preparing Raspberry Pi with hardware and installation. 3. Learn physical interfaces and electronics of Raspberry Pi and program them using practical's 4. Learn how to make consumer grade IoT safe and secure with proper use of protocols. 	

Sr No.	Old Syllabus	New Syllabus	justfication	total lecture
Unit I	SoC and Raspberry Pi System on Chip: What is System on chip? Structure of System on Chip. SoC products: FPGA, GPU, APU, Compute Units. ARM 8 Architecture: SoC on ARM 8. ARM 8 Architecture Introduction Introduction to Raspberry Pi: Introduction to Raspberry Pi, Raspberry Pi Hardware, Preparing your raspberry Pi. Raspberry Pi Boot: Learn how this small SoC boots without BIOS. Configuring boot sequences and hardware.	SoC and Raspberry Pi System on Chip: What is System on chip? Structure of System on Chip. SoC products: FPGA, GPU, APU, Compute Units. ARM 8 Architecture: SoC on ARM 8. ARM 8 Architecture Introduction Introduction to Raspberry Pi: Introduction to Raspberry Pi, Raspberry Pi Hardware, Preparing your raspberry Pi. Raspberry Pi Boot: Learn how this small SoC boots without BIOS. Configuring boot sequences and hardware.	No Change	15L

Unit II	<p>Programming Raspberry Pi</p> <p>Raspberry Pi and Linux: About Raspbian, Linux Commands, Configuring Raspberry Pi with Linux Commands</p> <p>Programming interfaces: Introduction to Node.js, Python.</p> <p>Raspberry Pi Interfaces: UART, GPIO, I2C, SPI</p> <p>Useful Implementations: Cross Compilation, Pulse Width Modulation, SPI for Camera.</p>	<p>Programming Raspberry Pi</p> <p>Raspberry Pi and Linux: About Raspbian, Linux Commands, Configuring Raspberry Pi with Linux Commands</p> <p>Programming interfaces: Introduction to Node.js, Python.</p> <p>Raspberry Pi Interfaces: UART, GPIO, I2C, SPI</p> <p>Useful Implementations: Cross Compilation, Pulse Width Modulation, SPI for Camera.</p>	No Change	15L
Unit III	<p>Introduction to IoT: What is IoT? IoT examples, Simple IoT LED Program.</p> <p>IoT and Protocols</p> <p>IoT Security: HTTP, UPnp, CoAP, MQTT, XMPP.</p> <p>IoT Service as a Platform: Clayster, Thingier.io, SenseIoT, carriers and Node RED.</p> <p>IoT Security and Interoperability: Risks, Modes of Attacks, Tools for Security and Interoperability.</p>	<p>Introduction to IoT: What is IoT? IoT examples, Simple IoT LED Program.</p> <p>IoT and Protocols</p> <p>IoT Security: HTTP, UPnp, CoAP, MQTT, XMPP.</p> <p>IoT Service as a Platform: Clayster, Thingier.io, SenseIoT, carriers and Node RED.</p> <p>IoT Security and Interoperability: Risks, Modes of Attacks, Tools for Security and Interoperability.</p> <p>IOT Projects & IOT Applications</p>	<p>Added:- IOT Projects & IOT Applications</p> <p>They should have small topics on it so they will connect real world of IOT</p>	15L

Textbook(s):

- 1) Learning Internet of Things, Peter Waher, Packt Publishing(2015)
- 2) Mastering the Raspberry Pi, Warren Gay, Apress(2014)

Additional Reference(s):

- 1) Abusing the Internet of Things, Nitesh Dhanjani, O'Reilly

Pedagogy: -

Physical computing involves learners creating programs that interact with the physical environment using various input and output devices. The concrete nature of physical computing is thought to help embed computing concepts and develop strong computational thinking skills. With physical computing, your learners could create anything from a simple flashing light (more engaging than it might sound) to a motor-driven trebuchet.
Raspberry Pi Projects

ICT Ref.: -

1. https://www.tutorialspoint.com/internet_of_things/index.htm
2. <https://www.javatpoint.com/iot-internet-of-things>

MOOC Courses:

1. https://onlinecourses.nptel.ac.in/noc21_cs63/preview

Course: USCS307	TOPICS (Credits : 02 Lectures/Week: 03) Web Programming	
Objectives: <p>To provide insight into emerging technologies to design and develop state of - the art web applications using client-side scripting, server-side scripting, and database connectivity.</p> Expected Learning Outcomes: <ol style="list-style-type: none"> 1. To design valid, well-formed, scalable, and meaningful pages using emerging technologies. 2. Understand the various platforms, devices, display resolutions, viewports, and browsers that render websites 3. To develop and implement client-side and server-side scripting language programs. 4. To develop and implement Database Driven Websites. 5. Design and apply XML to create a markup language for data and document centric applications. 		

Unit	Old Syllabus	New Syllabus	Justification	No. of lectures
Unit I	HTML5: Fundamental Elements of HTML, Formatting Text in HTML, Organizing Text in HTML, Links and URLs in HTML, Tables in HTML, Images on a Web Page, Image Formats, Image Maps, Colors, FORMs in HTML, Interactive Elements, Working with Multimedia - Audio and Video File Formats, HTML elements for inserting Audio / Video on a web page CSS: Understanding the Syntax of CSS, CSS Selectors, Inserting CSS in an HTML	HTML5: Fundamental Elements of HTML, Formatting Text in HTML, Organizing Text in HTML, Using Marquee tag Links and URLs in HTML, Tables in HTML, Images on a Web Page, Image Formats, Image Maps, Colors, FORMs in HTML, Interactive Elements, Working with Multimedia - Audio and Video File Formats, HTML elements for inserting Audio / Video on a web page CSS: Understanding the	Addition: Use of marquee tag and CSS properties to work with tables for better understanding of the basic text display, basic table formatting	15

	Document, CSS properties to work with background of a Page, CSS properties to work with Fonts and Text Styles, CSS properties for positioning an element	Syntax of CSS, CSS Selectors, Inserting CSS in an HTML Document, CSS properties to work with background of a Page, CSS properties to work with Fonts and Text Styles, CSS properties for positioning an element, CSS properties to work with tables		
Unit II	<p>JavaScript: Using JavaScript in an HTML Document, Programming Fundamentals of JavaScript – Variables, Operators, Control Flow Statements, Popup Boxes, Functions – Defining and Invoking a Function, Defining Function arguments, Defining a Return Statement, Calling Functions with Timer, JavaScript Objects - String, RegExp, Math, Date, Browser Objects - Window, Navigator, History, Location, Document, Cookies, Document Object Model, Form Validation using JavaScript</p> <p>XML: Comparing XML with HTML, Advantages and Disadvantages of XML Structure of an XML Document, XML Entity References, DTD, XSLT: XSLT Elements and</p>	<p>JavaScript: Using JavaScript in an HTML Document, Programming Fundamentals of JavaScript – Variables, Operators, Control Flow Statements, Popup Boxes, Functions – Defining and Invoking a Function, Defining Function arguments, Defining a Return Statement, Calling Functions with Timer, JavaScript Objects - String, RegExp, Math, Date, Browser Objects - Window, Navigator, History, Location, Document, Cookies, Document Object Model, DOM Events, Form Validation using JavaScript</p> <p>XML: Comparing XML with HTML, Advantages and Disadvantages of XML</p>	understanding of the basic event handling	15

	Attributes - xsl:template, xsl:apply-templates, xsl:import, xsl:call-template, xsl:include, xsl:element, xsl:attribute, e xsl:attribute-set, xsl:value-of	Structure of an XML Document, XML Entity References, DTD, XSLT: XSLT Elements and Attributes - xsl:template, xsl:apply-templates, xsl:import, xsl:call-template, xsl:include, xsl:element, xsl:attribute,		
Unit III	<p>AJAX: AJAX Web Application Model, How AJAX Works, XMLHttpRequest Object – Properties and Methods, Handling asynchronous requests using AJAX PHP: Variables and Operators, Program Flow, Arrays, Working with Files and Directories, Working with Databases, Working with Cookies, Sessions and Headers</p> <p>Introduction to jQuery: Fundamentals, Selectors, methods to access HTML attributes, methods for traversing, manipulators, events, effects</p>	<p>AJAX: AJAX Web Application Model, How AJAX Works, XMLHttpRequest Object – Properties and Methods, Handling asynchronous requests using AJAX PHP: Variables and Operators, Program Flow, Arrays, Working with Files and Directories, Working with Databases, Working with Cookies, Sessions and Headers</p> <p>Introduction to jQuery: Fundamentals, Selectors, methods to access HTML attributes, methods for traversing, manipulators, events, Animation on mouseover event, effects</p>		

Text Book(s):

- 1) HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery, 2ed, Dreamtech Press
- 2) Web Programming and Interactive Technologies, scriptDemics, StarEdu Solutions India.
- 3) PHP: A Beginners Guide, Vikram Vaswani, TMH

Additional Reference(s):

- 1) HTML, XHTML, and CSS Bible Fifth Edition, Steven M. Schafer, WILEY
- 2) Learn to Master HTML 5, scriptDemics, StarEdu Solutions Pvt Ltd.
- 3) Learning PHP, MySQL, JavaScript, CSS & HTML5, Robin Nixon, O'Reilly
- 4) PHP, MySQL, JavaScript & HTML5 All-in-one for Dummies, Steve Suehring, Janet Valade Wiley

Pedagogy: -

Web programming refers to the writing, markup and coding involved in Web development, which includes Web content, Web client and server scripting and network security. The most common languages used for Web programming are XML, HTML, JavaScript, Perl 5 and PHP. Web programming is different from just programming, which requires interdisciplinary knowledge on the application area, client and server scripting, and database technology.

PPT demonstrations, videos and Practical will help students to understand subject.

ICT Ref.: -

1. <https://www.w3schools.com/whatis/>
2. https://www.tutorialspoint.com/internet_technologies/websites_development.htm
3. <https://www.phptutorial.net/>
4. <https://www.javascripttutorial.net/>

Suggested List of Practical- SEMESTER III

Course: USCSP301	(Credits : 03 Lectures/Week: 09) USCS302+ USCS303+USCS304	
USCS302: Core JAVA		
<ol style="list-style-type: none"> 1. Accept integer values for a, b and c which are coefficients of quadratic equations. Find the solution of the quadratic equation. 2. Accept two n x m matrices. Write a Java program to find addition of these matrices. 3. Accept n strings. Sort names in ascending order. 4. Create a package: Animals. In the package animals create interface Animal with suitable behaviors. Implement the interface Animal in the same package animals. 5. Demonstrate Java inheritance using extends keyword. 6. Demonstrate method overloading and method overriding in Java. 7. Demonstrate creating your own exception in Java. 8. Using various AWT components, design Java applications to accept a student's resume. (Design form) 9. Write a Java List example and demonstrate methods of Java List interface. 10. Design simple calculator GUI application using AWT components. 		
USCS303: Operating System		
<p><i>Practical can be implemented either in JAVA or any other programming language.</i></p> <ol style="list-style-type: none"> 1. Write a Program to implement First Come First Serve(FCFS) Scheduling. 2. Write a Program to implement Shortest Job First(SJF) Scheduling. 3. Write a Program to implement Priority based Scheduling. 4. Write a Program to implement Round Robin. 5. Write a Program to FIFO page replacement algorithm. 6. Write a Program to LRU Page replacement algorithm. 7. Write a Program to implement an Optimal page replacement algorithm. 8. Write a Program to implement Dining Philosophers. 9. Write a Program to implement Deadlock Detection. 10. Write a Program to implement the Worst Fit Algorithm. 		

USCS304: Database Management Systems

1. Writing PL/SQL Blocks with basic programming constructs of Sequential Statements:
 - a. CONSTANT
 - b. NOT NULL
 - c. DEFAULT
 - d. %TYPE and % ROWTYPE Attribute.
2. Writing PL/SQL Blocks with basic programming constructs by including following:
 - a. If...then...Else, IF...ELSIF...ELSE... END IF
 - b. Case Statement.
3. Writing PL/SQL Blocks with basic programming constructs for following Iterative Structure:
 - a. While-loop Statements
 - b. For-loop Statements.
 - c. Unconstrained loops
4. Writing PL/SQL Blocks with basic programming constructs by including a GoTO to jump out of a loop and NULL as a statement inside IF.
5. Creating simple Sequences with clauses like START WITH, INCREMENT BY, MAXVALUE, MINVALUE, CYCLE | NOCYCLE, CACHE | NOCACHE, ORDER | NOORDER.
6. Writing Procedures in PL/SQL Block.
 - a. Create an empty procedure, replace a procedure and call procedure.
 - b. Create a stored procedure and call it.
 - c. Define procedure to insert data.
 - d. A forward declaration of procedure.
7. Writing Functions in PL/SQL Block
 - a. Define and call a function
 - b. Define and use function in select clause,
 - c. Call function in dbms_output.put_line.
8. Creating and working with Insert/Update/Delete Trigger using Before/After clause.
9. Writing PL/SQL Block for Cursors
 - a. Cursor attributes: %ROWCOUNT, %FOUND, %NOTFOUND, %ISOPEN
 - b. Cursor with sub queries
 - c. Combination of PL/SQL, cursor and for loop
 - d. Parameterized cursors, Cursor Variables

10. Study of transactions and locks

Course: USCSP302	(Credits : 03 Lectures/Week: 09) USCS305+ USCS306+USCS307	
USCS305: Combinatorics and Graph Theory		
<ol style="list-style-type: none">1. Solving problems on strings, sets and binomial coefficients.2. Solving problems using induction.3. Solving problems on Eulerian and Hamiltonian graphs.4. Solving problems on Chromatic number and coloring5. Solving problems using Kruskal's Algorithm6. Solving problems using Prim's Algorithm7. Solving problems using Dijkstra's Algorithm8. Solving problems of finding augmenting paths in network flows.9. Solving problems on network flows using Ford-Fulkerson Labeling Algorithm10. Solving problems on posets and their associated networks.		
USCS306: Physical Computing and IoT Programming		
<ol style="list-style-type: none">1. Preparing Raspberry Pi: Hardware preparation and Installation2. Linux Commands: Exploring the Raspbian3. GPIO: Light the LED with Python4. GPIO: LED Grid Module: Program the 8X8 Grid with Different Formulas5. SPI: Camera Connection and capturing Images using SPI6. Real Time Clock display using PWM.7. Stepper Motor Control: PWM to manage stepper motor speed.8. Node RED: Connect LED to Internet of Things9. Stack of Raspberry Pi for better Computing and analysis10. Create a simple Web server using Raspberry Pi		
USCS307: Web Programming		
<ol style="list-style-type: none">1. Design a webpage that makes use of<ol style="list-style-type: none">a. Document Structure Tagsb. Various Text Formatting Tagsc. List Tagsd. Image and Image Maps2. Design a webpage that makes use of		

a. Table tags

b. Form Tags (forms with various form elements)

- c. Navigation across multiple pages
 - d. Embedded Multimedia elements
- 3. Design a webpage that make use of Cascading Style Sheets with
 - a. CSS properties to change the background of a Page
 - b. CSS properties to change Fonts and Text Styles
 - c. CSS properties for positioning an element
- 4. Write JavaScript code for
 - a. Performing various mathematical operations such as calculating factorial / finding Fibonacci Series / Displaying Prime Numbers in a given range / Evaluating Expressions / Calculating reverse of a number
 - b. Validating the various Form Elements
- 5. Write JavaScript code for
 - a. Demonstrating different JavaScript Objects such as String, RegExp, Math, Date
 - b. Demonstrating different JavaScript Objects such as Window, Navigator, History, Location, Document,
 - c. Demonstrating basic mouse events
 - d. Storing and Retrieving Cookies
- 6. Create a XML file with Internal / External DTD and display it using
 - a. CSS
 - b. XSL
- 7. Design a webpage to handle asynchronous requests using AJAX on
 - a. Mouseover
 - b. button click
- 8. Write PHP scripts for
 - a. Retrieving data from HTML forms
 - b. Performing certain mathematical operations such as calculating factorial / finding Fibonacci Series / Displaying Prime Numbers in a given range / Evaluating Expressions / Calculating reverse of a number
 - c. Working with Arrays
 - d. Working with Files (Reading / Writing)
- 9. Write PHP scripts for
 - a. Working with Databases (Storing Records / Reprieving Records and Display them)
 - b. Storing and Retrieving Cookies
 - c. Storing and Retrieving Sessions
- 10. Design a webpage with some jQuery animation effects.

SEMESTER IV**THEORY**

Course: USCS401	TOPICS (Credits : 02 Lectures/Week:03) Fundamentals of Algorithms			
Objectives: 1. To understand basic principles of algorithm design and why algorithm analysis is important 2. To understand how to implement algorithms in Python 3. To understand how to transform new problems into algorithmic problems with efficient solutions 4. To understand algorithm design techniques for solving different problems Expected Learning Outcomes: 1. Understand the concepts of algorithms for designing good program 2. Implement algorithms using Python				
Unit	Old Syllabus	New Syllabus	Justification	Lectures
Unit I	Introduction to algorithm, Why to analysis algorithm, Running time analysis, How to Compare Algorithms, Rate of Growth, Commonly Used Rates of Growth, Types of Analysis, Asymptotic Notation, Big-O Notation, Omega-Ω Notation, Theta-Θ Notation, Asymptotic Analysis, Properties of Notations, Commonly used Logarithms and Summations, Performance characteristics of algorithms, Master Theorem for Divide and Conquer, Divide and Conquer Master Theorem: Problems & Solutions, Master Theorem for Subtract and Conquer Recurrences, Method of Guessing and Confirming	Introduction to algorithm, Why to analysis algorithm, Running time analysis, How to Compare Algorithms, Rate of Growth, Commonly Used Rates of Growth, Types of Analysis, Asymptotic Notation, Big-O Notation, Omega-Ω Notation, Theta-Θ Notation, Asymptotic Analysis, Properties of Notations, Commonly used Logarithms and Summations, Performance characteristics of algorithms, Master Theorem for Divide and Conquer, Divide and Conquer Master Theorem: Problems & Solutions, Master Theorem for Subtract and Conquer Recurrences, Method of Guessing and Confirming	No Changes	15L

Unit II	<p>Tree algorithms: What is a Tree? Glossary, Binary Trees, Types of Binary Trees, Properties of Binary Trees, Binary Tree Traversals, Generic Trees (N-ary Trees), Threaded Binary Tree Traversals, Expression Trees, Binary Search Trees (BSTs), Balanced Binary Search Trees, AVL (Adelson-Velskii and Landis) Trees</p> <p>Graph Algorithms: Introduction, Glossary, Applications of Graphs, Graph Representation, Graph Traversals, Topological Sort, Shortest Path Algorithms, Minimal Spanning Tree</p> <p>Selection Algorithms: What are Selection Algorithms? Selection by Sorting, Partition-based Selection Algorithm, Linear Selection Algorithm - Median of Medians Algorithm, Finding the K Smallest Elements in Sorted Order</p>	<p>Tree algorithms: What is a Tree? Glossary, Binary Trees, Types of Binary Trees, Properties of Binary Trees, Binary Tree Traversals, Generic Trees (N-ary Trees), Threaded Binary Tree Traversals, Expression Trees, Binary Search Trees (BSTs), Balanced Binary Search Trees, AVL (Adelson-Velskii and Landis) Trees and Red Black Tree</p> <p>Graph Algorithms: Introduction, Glossary, Applications of Graphs, Graph Representation, Graph Traversals, Topological Sort, Shortest Path Algorithms, Minimal Spanning Tree</p> <p>Selection Algorithms: What are Selection Algorithms? Selection by Sorting, Partition-based Selection Algorithm, Linear Selection Algorithm - Median of Medians Algorithm, Finding the K Smallest Elements in Sorted Order</p>	Deep knowledge about Red Black Tree	15L
Unit III	<p>Algorithms Design Techniques: Introduction, Classification, Classification by Implementation Method, Classification by Design Method</p> <p>Greedy Algorithms: Introduction, Greedy Strategy, Elements of Greedy Algorithms, Advantages and Disadvantages of Greedy Method, Greedy Applications, Understanding Greedy Technique</p> <p>Divide and Conquer Algorithms: Introduction, What</p>	<p>Algorithms Design Techniques: Introduction, Classification, Classification by Implementation Method, Classification by Design Method</p> <p>Greedy Algorithms: Introduction, Greedy Strategy, Elements of Greedy Algorithms, Advantages and Disadvantages of Greedy Method, Greedy Applications, Understanding Greedy Technique</p> <p>Divide and Conquer Algorithms: Introduction, What</p>	No Changes	15L

	is Divide and Conquer Strategy? Divide and Conquer Visualization, Understanding Divide and Conquer, Advantages of Divide and Conquer, Disadvantages of Divide and Conquer, Master Theorem, Divide and Conquer Applications Dynamic Programming: Introduction, What is Dynamic Programming Strategy? Properties of Dynamic Programming Strategy, Problems which can be solved using Dynamic Programming, Dynamic Programming Approaches, Examples of Dynamic Programming Algorithms, Understanding Dynamic Programming, Longest Common Subsequence	is Divide and Conquer Strategy? Divide and Conquer Visualization, Understanding Divide and Conquer, Advantages of Divide and Conquer, Disadvantages of Divide and Conquer, Master Theorem, Divide and Conquer Applications Dynamic Programming: Introduction, What is Dynamic Programming Strategy? Properties of Dynamic Programming Strategy, Problems which can be solved using Dynamic Programming, Dynamic Programming Approaches, Examples of Dynamic Programming Algorithms, Understanding Dynamic Programming, Longest Common Subsequence		
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Textbook(s):

1. Data Structure and Algorithmic Thinking with Python, Narasimha Karumanchi , CareerMonk Publications, 2016
2. Introduction to Algorithm, Thomas H Cormen, PHI

Additional References(s):

1. Data Structures and Algorithms in Python, Michael T. Goodrich, Roberto Tamassia, Michael H. Goldwasser, 2016, Wiley
2. Fundamentals of Computer Algorithms, Sartaj Sahni and Sanguthevar Rajasekaran Ellis Horowitz, Universities Press

Pedagogy: -

This mathematical subject can be made interesting by using online videos. More emphasis can be given problem solving

ICT Ref.: -

1. <https://www.javatpoint.com/daa-tutorial>
2. https://www.tutorialspoint.com/design_and_analysis_of_algorithms/index.htm

Course: USCS402	TOPICS (Credits : 02 Lectures/Week: 03) Advanced Java			
Objectives: Explore advanced topics of Java programming for solving problems. Expected Learning Outcomes: 1) Understand the concepts related to Java Technology 2) Explore and understand use of Java Server Programming				
Unit	Old Syllabus	New Syllabus	Justification	No.of Lectures
Unit I	Swing: Need for swing components, Difference between AWT and swing, Components hierarchy, Panes, Swing components: JLabel, JTextField and JPasswordField, JTextAres, JButton, JCheckBox, JRadioButton, JComboBox and JList JDBC: Introduction, JDBC Architecture, Types of Drivers, Statement, ResultSet, Read Only ResultSet, Updatable ResultSet, Forward Only ResultSet, Scrollable	Swing: Need for swing components, Difference between AWT and swing, Components hierarchy, Panes, Swing components: JLabel, JTextField and JPasswordField, JButton, JCheckBox, JRadioButton, JComboBox and JList JDBC: Introduction, JDBC Architecture, Types of Drivers, Statement, ResultSet, Read Only ResultSet, Updatable ResultSet, Forward Only ResultSet, Scrollable ResultSet, PreparedStatement, Connection Modes, SavePoint, Batch Updations, CallableStatement, BLOB		15L

	ResultSet, PreparedStatement, Connection Modes, SavePoint, Batch Updations, CallableStatement, BLOB & CLOB	& CLOB		
Unit II	Servlets: Introduction, Web application Architecture, Http Protocol & Http Methods, Web Server & Web Container, Servlet Interface, GenericServlet, HttpServlet, Servlet Life Cycle, ServletConfig, ServletContext, Servlet Communication, Session Tracking Mechanisms JSP: Introduction, JSP Lifecycle, JSP Implicit Objects & Scopes, JSP Directives, JSP Scripting Elements, JSP Actions: Standard actions and customized actions,	Servlets: Introduction, Web application Architecture, Http Protocol & Http Methods, Web Server & Web Container, Servlet Interface, GenericServlet, HttpServlet, Servlet Life Cycle, ServletConfig, ServletContext, Servlet Communication, Session Tracking Mechanisms JSP: Introduction, JSP Lifecycle, JSP Implicit Objects & Scopes, JSP Directives, JSP Scripting Elements, JSP Actions: Standard actions and customized actions,	No Change	15L

<p>Unit III</p>	<p>Java Beans: Introduction, JavaBeans Properties, Examples</p> <p>Struts 2: Basic MVC Architecture, Struts 2 framework features, Struts 2 MVC pattern, Request life cycle, Examples, Configuration Files, Actions, Interceptors, Results & Result Types, Value Stack/OGNL</p> <p>JSON: Overview, Syntax, DataTypes, Objects, Schema, Comparison with XML, JSON with Java</p>	<p>Java Beans: Introduction, JavaBeans Properties, Examples.</p> <p>JSON: Overview, Syntax, Datatypes, Objects, Schema, Comparison with XML, JSON with Java.</p> <p>Hibernate: Introduction, Writing the application, application development approach, creating database and tables in MySQL, creating a web application, Adding the required library files, creating a java bean class, creating hibernate configuration and mapping file, adding a mapping resource, creating JSPs.</p> <p>Struts 2: Basic MVC Architecture, Struts 2 framework features, Struts 2 MVC pattern, Request life cycle, Examples, Configuration Files, Actions, Interceptors, Results & Result Types, Value Stack/OGNL</p>	<p>Addition: Get a detailed idea about Object Relation Mapping by Hibernate</p>	<p>15L</p>
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Textbook(s):

- 1) Cay S. Horstmann, Gary Cornell, Core Java™ 2: Volume II–Advanced Features Prentice Hall PTR, 9th Edition
- 2) Herbert Schildt, Java2: The Complete Reference, Tata McGraw-Hill, 5th Edition
- 3) Joe Wigglesworth and Paula McMillan, Java Programming: Advanced Topics, Thomson Course Technology (SPD), 3rd Edition

Additional Reference(s):

- 1) Advanced Java Programming, Uttam K. Roy, Oxford University Press
- 2) *The Java Tutorials*: <http://docs.oracle.com/javase/tutorial/>)
- 3) The Java Tutorials of Sun Microsystems Inc

Pedagogy: -

Programming can be used for designing real-life applications by reading/writing to files, GUI programming, interfacing database/networks and various other features can be studied in this paper. For GUI, Database PPT can be used in classroom teaching.

ICT Ref.: -

1. <https://www.tutorialspoint.com/java/index.htm>
2. <https://www.w3schools.in/java-tutorial/>
3. <https://beginnersbook.com/java-tutorial-for-beginners-with-examples/>
4. <https://www.javatpoint.com/what-is-advance-java>

Course: USCS40 3	TOPICS (Credits :02 Lectures/Week:03) Computer Networks			
Objectives: In this era of Information, its computation and its exchange techniques, Learners should be able to conceptualize and understand the framework and working of communication networks. And on completion, will be able to have a firm grip over this very important segment of the Internet. Expected Learning Outcomes : 1. Learners will be able to understand the concepts of networking, which are important for them to be known as ‘ <i>networking professionals</i> ’. 2. Useful to proceed with industrial requirements and International vendor certifications.				
Unit	Old Syllabus	New Syllabus	Justification	No. of Lectures
Unit I	Introduction Network Models: Introduction to data communication, Components, Data Representation, Data Flow, Networks, Network Criteria, Physical Structures, Network types, Local Area Network, Wide Area Network, Switching, The Internet, Accessing the Internet, standards and administration Internet Standards. Network Models, Protocol layering, Scenarios, Principles of Protocol Layering, Logical Connections, TCP/IP Protocol Suite, Layered Architecture, Layers in	Introduction Network Models: Introduction to data communication, Components, Data Representation, Data Flow, Networks, Network Criteria, Physical Structures, Network types, Local Area Network, Wide Area Network, Switching, The Internet, Accessing the Internet, standards and administration Internet Standards. Network Models, Protocol layering, Scenarios, Principles of Protocol Layering,	No change	15L

		Logical Connections, TCP/IP Protocol Suite, Layered Architecture, Layers in		
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	<p>the TCP/IP Protocol Suite, Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing. Detailed introduction to Physical Layer, Detailed introduction to Data-Link Layer, Detailed introduction to Network Layer, Detailed introduction to Transport Layer, Detailed introduction to Application Layer.</p> <p>Data and Signals, Analog and Digital Data, Analog and Digital Signals, Sine Wave Phase, Wavelength, Time and Frequency Domains, Composite Signals, Bandwidth, Digital Signal, Bit Rate, Bit Length, Transmission of Digital Signals, Transmission Impairments, Attenuation, Distortion, Noise, Data Rate</p> <p>Limits, Performance, Bandwidth, Throughput, Latency (Delay)</p>	<p>the TCP/IP Protocol Suite, Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing. Detailed introduction to Physical Layer, Detailed introduction to Data-Link Layer, Detailed introduction to Network Layer, Detailed introduction to Transport Layer, Detailed introduction to Application Layer.</p> <p>Data and Signals, Analog and Digital Data, Analog and Digital Signals, Sine Wave Phase, Wavelength, Time and Frequency Domains, Composite Signals, Bandwidth, Digital Signal, Bit Rate, Bit Length, Transmission of Digital Signals, Transmission Impairments, Attenuation, Distortion, Noise, Data Rate</p>		
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		Limits, Performance, Bandwidth, Throughput, Latency (Delay)		
Unit II	Introduction to Physical Layer and Data-Link Layer: Digital Transmission digital-to-digital conversion, Line Coding, Line Coding Schemes, analog-to-digital conversion, Pulse Code Modulation (PCM), Transmission Modes, Parallel Transmission, Serial Transmission. Analog Transmission, digital-to-analog Conversion, Aspects of Digital-to-Analog Conversion, Amplitude Shift Keying, Frequency Shift Keying, Phase Shift Keying, analog-to-analog Conversion, Amplitude Modulation (AM), Frequency Modulation (FM), Phase Modulation (PM), Multiplexing, Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division Multiplexing. Transmission Media, Guided Media, Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable. Switching, Three Methods of Switching , Circuit Switched Networks, Packet Switching, Introduction to Data-Link Layer, Nodes and Links, Services, Two Sub-layers, Three Types of addresses, Address Resolution Protocol (ARP).	Introduction to Physical Layer and Data-Link Layer: Digital Transmission digital-to-digital conversion, Line Coding, Line Coding Schemes, analog-to-digital conversion, Pulse Code Modulation (PCM), Transmission Modes, Parallel Transmission, Serial Transmission. Analog Transmission, digital-to-analog Conversion, Aspects of Digital-to-Analog Conversion, Amplitude Shift Keying, Frequency Shift Keying, Phase Shift Keying, analog-to-analog Conversion, Amplitude Modulation (AM), Frequency Modulation (FM), Phase Modulation (PM), Multiplexing, Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time-Division	No change	15L

	Error Detection and Correction, introduction, Types of Errors, Redundancy, Detection versus Correction,	Multiplexing. Transmission Media, Guided Media, Twisted-Pair Cable, Coaxial Cable, Fiber-Optic Cable. Switching, Three Methods of Switching , Circuit Switched Networks, Packet Switching, Introduction to Data-Link Layer, Nodes and Links, Services, Two Sub-layers, Three Types of addresses, Address Resolution Protocol (ARP). Error Detection and Correction, introduction, Types of Errors, Redundancy, Detection versus		
Unit III	Network layer, Transport Layer Media Access Control (MAC), random access, CSMA, CSMA/CD, CSMA/CA, controlled access, Reservation, Polling, Token Passing, channelization, FDMA, TDMA, CDMA. Connecting Devices and Virtual LANs, connecting devices, Hubs, Link-Layer	Network layer, Transport Layer Media Access Control (MAC), random access, CSMA, CSMA/CD, CSMA/CA, controlled access, Reservation, Polling, Token Passing,	No change	15L

	<p>Switches, Routers,</p> <p>Introduction to Network Layer, network layer services, Packetizing, Routing and Forwarding, Other Services, IPv4 addresses, Address Space, Classful Addressing.</p> <p>Unicast Routing, General Idea, Least-Cost Routing, Routing Algorithms, Distance-Vector Routing, Link-State Routing, Path-Vector Routing, Introduction to Transport Layer, Transport-Layer Services, Connectionless and Connection-Oriented Protocols.</p> <p>Transport-Layer Protocols, Service, Port Numbers, User Datagram Protocol, User Datagram, UDP Services, UDP Applications, Transmission Control Protocol, TCP Services, TCP Features, Segment.</p>	<p>Switches, Routers,</p> <p>Introduction to Network Layer, network layer services,</p> <p>Packetizing, Routing and Forwarding, Other Services, IPv4 addresses, Address Space, Classful Addressing.</p> <p>Unicast Routing, General Idea, Least-Cost Routing, Routing Algorithms, Distance-Vector Routing, Link-State Routing, Path-Vector Routing,</p> <p>Introduction to Transport Layer, Transport-Layer Services,</p> <p>Connectionless and Connection-Oriented Protocols.</p> <p>Transport-Layer Protocols, Service, Port Numbers, User Datagram Protocol, User Datagram, UDP Services, UDP Applications,</p>		
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		Transmission Control Protocol, TCP Services, TCP Features, Segment.		
Textbook(s): <ol style="list-style-type: none"> 1) Data Communications and Networking, Behrouz A. Forouzan, Fifth Edition, TMH, 2013. 2) Computer Network, Andrew S. Tanenbaum, David J. Wetherall, Fifth Edition, Pearson Education, 2011. Additional Reference(s): <ol style="list-style-type: none"> 1) Computer Network, Bhushan Trivedi, Oxford University Press 2) Data and Computer Communication, William Stallings, PHI 				

Pedagogy: -

Since the theoretical concepts are rather abstract in this subject, and students often find them too technical and difficult to understand, many authors attempt to answer the question on how to improve students' motivation and interest for the complex teaching material of CN. In this work, we follow a rigorous paper collection methodology and extract a large number of previous studies that relate to the stated research questions. methods based on using visualization objects such as network simulators, multimedia applications, packet tracing tools or visual analogies; methods based on using the virtualization techniques; methods precipitating active learning paradigm and methods based on the practical hands-on laboratory exercises. We examine, classify, and contrast the usual approaches used in teaching CN, provide useful insights on how appropriate they are in achieving specific educational goals and determine the future research directions.

ICT Ref.: -

1. <https://www.javatpoint.com/computer-network-tutorial>
2. https://www.tutorialspoint.com/data_communication_computer_network/index.htm

MOOC Courses:

1. https://onlinecourses.swayam2.ac.in/cec21_cs19/preview

Course: USCS404	TOPICS (Credits : 02 Lectures/Week: 03)	
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	Software Engineering	
<p>Objectives:</p> <p>The objective of this paper is to provide an idea of using various process models in the software industry according to given circumstances.</p> <p>To gain the knowledge of how Analysis, Design, Implementation, Testing and Maintenance processes are conducted in a software project.</p> <p>Expected Learning Outcomes:</p> <p>On completion of the course, student will be able to</p> <ul style="list-style-type: none"> - various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance. - know various processes used in all the phases of the product. - apply the knowledge, techniques, and skills in the development of a software product. 		

Unit	Old Syllabus	New Syllabus	Justification	No. of Lectures
Unit I	<p>Introduction: The Nature of Software, Software Engineering, The Software Process, Generic Process Model, The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, Component-Based Development, The Unified Process Phases, Agile Development- Agility, Agile Process, Extreme Programming</p> <p>Requirement Analysis and System Modeling: Requirements Engineering, Eliciting Requirements, SRS Validation, Components of</p>	<p>Introduction: Definition of Software, The Nature of Software, Software Engineering, The Software Process, Generic Process Model, The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models, Component-Based Development, The Unified Process Phases, Introduction to Agile software development..</p> <p>Requirement Analysis and System Modeling: Requirements Engineering, Eliciting Requirements, SRS Validation,</p>	Students will understand basic term and process of Agile software development and it will help the students in software development phases	15L

		Components of		
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	SRS, Characteristics of SRS , Object-oriented design using the UML - Class diagram, Object diagram, Use case diagram, Sequence diagram, Collaboration diagram, State chart diagram, Activity diagram, Component diagram, Deployment diagram	SRS, Characteristics of SRS , Object-oriented design using the UML - Class diagram, Object diagram, Use case diagram, Sequence diagram, Collaboration diagram, State chart diagram, Activity diagram, Component diagram, Deployment diagram		
Unit II	<p>System Design: System/Software Design, Architectural Design, Low-Level Design Coupling and Cohesion, Functional-Oriented Versus The Object-Oriented Approach, Design Specifications, Verification for Design, Monitoring and Control for Design</p> <p>Software Measurement and Metrics: Product Metrics – Measures, Metrics, and Indicators, Function-Based Metrics, Metrics for Object-Oriented Design, Operation-Oriented Metrics, User Interface Design Metrics, Metrics for Source Code, Halstead Metrics Applied to Testing, Metrics for Maintenance, Cyclomatic Complexity, Software Measurement - Size-Oriented, Function-Oriented Metrics, Metrics for Software</p>	<p>System Design: System/Software Design, Architectural Design, Low-Level Design Coupling and Cohesion, Functional-Oriented Versus The Object-Oriented Approach, Design Specifications, Verification for Design, Monitoring and Control for Design</p> <p>Software Measurement and Metrics: Product Metrics – Measures, Metrics, and Indicators, Function-Based Metrics, Metrics for Object-Oriented Design, Operation-Oriented Metrics, User Interface Design Metrics, Metrics for Source Code, Halstead Metrics Applied to Testing, Metrics for Maintenance, Cyclomatic Complexity, Software Measurement - Size-Oriented, Function-Oriented Metrics, Metrics for Software</p>		15 L

	<p>Quality</p> <p>Software Project Management: Estimation in Project Planning Process</p> <p>–Software Scope And Feasibility, Resource Estimation, Empirical Estimation Models – COCOMO II, Estimation for Agile Development, The Make/Buy Decision, Project Scheduling - Basic Principles, Relationship Between People and Effort, Effort Distribution, Time-Line Charts</p>	<p>Quality</p> <p>Software Project Management: Estimation in Project Planning Process</p> <p>–Software Scope And Feasibility, Resource Estimation, Empirical Estimation Models – COCOMO II, Estimation for Agile Development, The Make/Buy Decision, Project Scheduling - Basic Principles, Relationship Between People and Effort, Effort Distribution, Time-Line Charts.</p> <p>Case Study: - Library Management. Hotel Management. Hospital Management. Railway Ticket Booking.</p>		
Unit III	<p>Risk Management - Software Risks, Risk Identification, Risk Projection and Risk Refinement, RMMM Plan</p> <p>Software Quality Assurance: Elements of SQA, SQA Tasks, Goals, and Metrics, Formal Approaches to SQA, Six Sigma, Software Reliability, The ISO 9000 Quality Standards, Capability Maturity Model Software Testing : Verification and Validation, Introduction to Testing, Testing Principles, Testing Objectives, Test Oracles, Levels of Testing, White-Box Testing/Structural</p>	<p>Risk Management - Software Risks, Risk Identification, Risk Projection and Risk Refinement, RMMM Plan</p> <p>Software Quality Assurance: Elements of SQA, SQA Tasks, Goals, and Metrics, Formal Approaches to SQA, Six Sigma, Software Reliability, The ISO 9000 Quality Standards, Capability Maturity Model Software Testing : Verification and Validation, Introduction to Testing, Testing Principles, Testing Objectives, Test Oracles, Levels of Testing, White-Box Testing/Structural</p>	15 L	

	Testing, Functional/Black-Box Testing, Test Plan, Test-Case Design	Testing, Functional/Black-Box Testing, Test Plan, Test-Case Design		
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Text book(s):

1) Software Engineering, A Practitioner's Approach, Roger S, Pressman.(2014)

Additional Reference(s):

Software Engineering, Ian Sommerville, Pearson Education
 Software Engineering: Principles and Practices",Deepak Jain,OXFORD
 University Press,
 Fundamentals of Software Engineering, Fourth Edition, Rajib Mall, PHI
 Software Engineering: Principles and Practices, Hans Van Vliet, John
 Wiley & Sons

A Concise Introduction to Software Engineering, Pankaj Jalote, Springer

Pedagogy: -

we can teach UML regarding analyze and design of engineering system. Put UML in a pedagogical perspective. We teach software engineering may have an effect whether good software development is practiced in industry. In teaching software engineering, experience has shown us that students will not be convinced of the benefits of using software engineering techniques until they experience the benefits themselves. Completing a semester-long project is the most effective way of convincing students that software engineering is critical to their professional development as well as to the development of reliable, robust, easily-maintained software.

ICT Ref.: -

1. https://www.tutorialspoint.com/software_engineering/index.htm
2. <https://www.javatpoint.com/software-engineering-tutorial>
3. <https://tutorialsinhand.com/tutorials/software-engineering-tutorial/software-engineering-introduction/software-engineering-home.aspx>

MOOC Courses:

1.https://onlinecourses.nptel.ac.in/noc21_cs65/preview

Course: USCS405	TOPICS (Credits: 02 Lectures/Week: 03) Linear Algebra using Python	
Objectives: To offer the learner the relevant linear algebra concepts through computer science applications. Expected Learning Outcomes: <ol style="list-style-type: none"> 1. Appreciate the relevance of linear algebra in the field of computer science. 2. Understand the concepts through program implementation Instill a computational thinking while learning linear algebra. 		

Unit	Old Syllabus	New Syllabus	Justification	No. of Lectures
Unit I	Field: Introduction to complex numbers, numbers in Python, Abstracting over fields, Playing with GF(2), Vector Space: Vectors are functions, Vector addition, Scalar-vector multiplication, Combining vector addition and scalar multiplication, Dictionary-based representations of vectors, Dot-product, Solving a triangular system of linear equations. Linear combination, Span, The geometry of sets of vectors, Vector spaces, Linear systems, homogeneous and otherwise	Field: Introduction to complex numbers, numbers in Python, Abstracting over fields, Playing with GF(2), Introduction to Vectors Vector Space: Vectors are functions, Vector addition, Scalar-vector multiplication, Combining vector addition and scalar multiplication, Dictionary-based representations of vectors, Dot-product. Cross Product Inner Product: The inner product for vectors over the reals, Orthogonality, Orthogonalization: Projection orthogonal to multiple vectors, projecting orthogonal to mutually orthogonal vectors, Building an orthogonal set of generators, Orthogonal complement Solving a triangular system of linear equations. Linear combination, Linearly dependent and independent vectors, Linear Span	Addition: Inner Product is shifted from Unit III to Unit I for continuation with Vector Spaces. Deletion : Solving of triangular system linear equations is removed from Unit I and Shifted to Unit II	15L

Unit II	<p>Matrix: Matrices as vectors, Transpose, Matrix-vector and vector-matrix multiplication in terms of linear combinations, Matrix-vector multiplication in terms of dot-products, Null space, Computing sparse matrix-vector product, Linear functions, Matrix-matrix multiplication, Inner product and outer product,</p>	<p>Matrix: Matrices as vectors, Transpose, Matrix-vector and vector-matrix multiplication in terms of linear combinations, Matrix-vector multiplication in terms of dot-products, Null space, Computing sparse matrix-vector product, Linear functions, Matrix-matrix multiplication, Inner product and outer product,</p>		15L
	<p>From function inverse to matrix inverse</p> <p>Basis: Coordinate systems, Two greedy algorithms for finding a set of generators, Minimum Spanning Forest and GF(2), Linear dependence, Basis, Unique representation, Change of basis, first look, Computational problems involving finding a basis Dimension: Dimension and rank, Direct sum, Dimension and linear functions, The annihilator</p>	<p>From function inverse to matrix inverse</p> <p>Solving a triangular system of linear equations. Linear combination, Linearly dependent and independent vectors, Linear Span</p>		15L
Unit III	<p>Gaussian elimination: Echelon form, Gaussian elimination over GF(2), Solving a matrix-vector equation using Gaussian elimination, Finding a basis for the null space, Factoring integers, Inner Product: The inner product for vectors over the reals, Orthogonality, Orthogonalization: Projection orthogonal to multiple vectors, Projecting orthogonal to mutually orthogonal vectors, Building an orthogonal set of generators, Orthogonal complement, Eigenvector: Modeling discrete dynamic processes, Diagonalization of the Fibonacci matrix, Eigenvalues and eigenvectors, Coordinate representation in terms of eigenvectors, The Internet worm,</p>	<p>Gaussian elimination: Echelon form, Gaussian elimination over GF(2), Solving a matrix-vector equation using Gaussian elimination, Rank of the matrix, Linear systems: Homogeneous and Non-homogeneous systems. Consistency of Linear equations. Solution of Homogeneous and Non-homogeneous equations. Eigenvalues and Eigenvectors. Diagonalization of the Fibonacci matrix, Coordinate representation in terms of eigenvectors, Finding a basis for the null space</p>	<p>Addition: The concepts related to Rank are explained in detail.</p>	

	Existence of eigenvalues, Markov chains, Modeling a web surfer: PageRank.	Basis: Coordinate systems, Two greedy algorithms for finding a set of generators, Minimum Spanning Forest and GF(2), Unique representation, Change of basis, first look, Computational problems involving finding a basis. Modeling discrete dynamic processes, The Internet worm, Existence of eigenvalues, Markov chains, Modeling a web surfer: PageRank.		
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Textbook(s):

- 1) Coding the Matrix Linear Algebra through Applications to Computer Science Edition 1, PHILIP N. KLEIN, Newtonian Press (2013)

Additional References:

- 1) Linear Algebra and Probability for Computer Science Applications, Ernest Davis, A K Peters/CRC Press (2012).
- 2) Linear Algebra and Its Applications, Gilbert Strang, Cengage Learning, 4th Edition (2007).
- 3) Linear Algebra and Its Applications, David C Lay, Pearson Education India; 3rd Edition (2002)

Pedagogy: -

SymPy is a Python library for symbolic mathematics. It aims to become a full-featured computer algebra system (CAS) while keeping the code as simple as possible in order to be comprehensible and easily extensible. SymPy is written entirely in Python.

Off-the-shelf packages like Python Numpy or Matlab have already done a lot of hard work for us underneath the hood. But, in order to correctly utilize these tools at hand, we still need to have a comprehensive understanding of Linear Algebra itself .

ICT Ref.: -

1. <https://www.javatpoint.com/numpy-linear-algebra>

Course: USCS406	TOPICS (Credits : 02 Lectures/Week: 03) .Net Technologies	
Objectives: To explore .NET technologies for designing and developing dynamic, interactive and responsive web applications. Expected Learning Outcomes: <ol style="list-style-type: none"> 1. Understand the .NET framework 2. Develop a proficiency in the C# programming language 3. Proficiently develop ASP.NET web applications using C# 4. Use ADO.NET for data persistence in a web application 		

Unit	Old syllabus	New Syllabus	Justification	No. of Lectures
Unit I	The .NET Framework: .NET Languages, Common Language Runtime, .NET Class Library C# Language Basics: Comments, Variables and Data Types, Variable Operations, Object-Based Manipulation, Conditional Logic, Loops, Methods, Classes, Value Types and Reference Types, Namespaces and Assemblies, Inheritance, Static Members, Casting Objects, Partial Classes ASP.NET: Creating Websites, Anatomy of a Web Form - Page Directive, Doctype, Writing Code - Code-Behind Class, Adding Event Handlers, Anatomy of an ASP.NET	The .NET Framework: .NET Languages, Common Language Runtime, .NET Class Library C# Language Basics: Comments, Variables and Data Types, Variable Operations, Object-Based Manipulation, Conditional Logic, Loops, Methods, Classes, Value Types and Reference Types, Namespaces and Assemblies, Inheritance, Static Members, Casting Objects, Partial Classes ASP.NET: Creating Websites, Anatomy of a Web Form - Page Directive, Doctype, Writing Code - Code-Behind Class, Adding Event Handlers,	Understanding of basic HTML server controls	15

	<p>Application - ASP.NET File Types, ASP.NET Web Folders, HTML Server Controls - View State, HTML Control Classes, HTML Control Events, HtmlControl Base Class, HtmlContainerControl Class, HtmlInputControl Class, Page Class, global.asax File, web.config File</p>	<p>Anatomy of an ASP.NET Application - ASP.NET File Types, ASP.NET Web Folders, HTML Server Controls - View State, HTML Control Classes, HTML Control Events, HtmlControlHtmlInputControl Class Base Class, HtmlContainerControl Class, s, HTML Server Controls, Page Class, global.asax File, web.config File</p>		
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Unit II	<p>Web Controls: Web Control Classes, WebControl Base Class, List Controls, Table Controls, Web Control Events and AutoPostBack, Page Life Cycle</p> <p>State Management: ViewState, Cross-Page Posting, Query String, Cookies, Session State, Configuring Session State, Application State</p> <p>Validation: Validation Controls, Server-Side Validation, Client-Side Validation, HTML5 Validation, Manual Validation, Validation with Regular Expressions</p> <p>Rich Controls: Calendar Control, AdRotator Control, MultiView Control</p> <p>Themes and Master Pages: How Themes Work, Applying a Simple Theme,</p> <p>Handling Theme Conflicts, Simple Master Page and Content Page, Connecting Master pages and Content Pages, Master Page with Multiple Content Regions, Master Pages and Relative Paths</p> <p>Website Navigation: Site Maps, URL Mapping and Routing, SiteMapPath</p>	<p>Web Controls: Web Control Classes, WebControl Base Class, List Controls, Table Controls, Web Control Events and AutoPostBack, Page Life Cycle</p> <p>State Management: ViewState, Cross-Page Posting, Query String, Cookies, Session State, Configuring Session State, Application State</p> <p>Validation: Validation Controls, Server-Side Validation, Client-Side Validation, HTML5 Validation, Manual Validation, Validation with Regular Expressions</p> <p>Login Control</p> <p>Rich Controls: Calendar Control, AdRotator Control, MultiView Control</p> <p>Themes and Master Pages: How Themes Work, Applying a Simple Theme,</p> <p>Handling Theme Conflicts, Simple Master Page and Content Page, Connecting Master pages and Content Pages, Master Page with Multiple Content Regions, Master Pages and Relative Paths</p> <p>Website Navigation: Site Maps, URL Mapping and</p>	Understanding the basic requirement of login control	15
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	Control, TreeView Control, Menu Control	Routing, SiteMapPath Control, TreeView Control, Menu Control		
Unit III	<p>ADO.NET: Data Provider Model, Direct Data Access - Creating a Connection, Select Command, DataReader, Disconnected Data Access</p> <p>Data Binding: Introduction, Single-Value Data Binding, Repeated-Value Data Binding, Data Source Controls – SqlDataSource</p> <p>Data Controls: GridView, DetailsView, FormView</p> <p>Working with XML: XML Classes – XMLTextWriter, XMLTextReader</p> <p>Caching: When to Use Caching, Output Caching, Data Caching</p> <p>LINQ: Understanding LINQ, LINQ Basics,</p> <p>ASP.NET AJAX:</p> <p>ScriptManager, Partial Refreshes, Progress Notification, Timed Refreshes</p>	<p>ADO.NET: Data Provider Model, Direct Data Access - Creating a Connection, Select Command, DataReader, Disconnected Data Access</p> <p>Data Binding: Introduction, Single-Value Data Binding, Repeated-Value Data Binding, Data Source Controls – SqlDataSource</p> <p>Data Controls: GridView, DetailsView, FormView</p> <p>Working with XML: XML Classes – XMLTextWriter, XMLTextReader</p> <p>Caching: When to Use Caching, Output Caching, Data Caching</p> <p>LINQ: Understanding LINQ, LINQ Basics,</p> <p>ASP.NET AJAX:</p> <p>ScriptManager, Partial Refreshes, Progress Notification, Timed Refreshes</p> <p>Introduction to MVC framework: MVC architecture and its features, MVC components, MVC folders</p>	Understanding of MVC framework	15

Textbook(s):

- 1) Beginning ASP.NET 4.5 in C#, Matthew MacDonald, Apress(2012)

Additional Reference(s):

- 1) The Complete Reference ASP .NET, MacDonald, Tata McGraw Hill
- 2) Beginning ASP.NET 4 in C# and VB Imar Spanajaars, WROX

Pedagogy: -

.NET CORE is a cross-platform which enables developers to build applications, services, and websites with .NET. .NET Core doesn't replace .NET Framework exactly. .NET 5 is basically a continuation of .NET Core with more features and functionalities in .NET for unified cross-platform devices and technologies. ASP.NET was initially released in 2002 and iterated over the years and is an extension to the .NET platform which is dedicated to building web applications with various tools and libraries. It acts as the base framework to process web requests in C# and F#, has web-page templating syntax, different libraries for common web patterns for instance Model View Controller (MVC), Authentication System, and more.

ICT Ref.: -

1. <https://dotnettutorials.net/>
2. <https://www.javatpoint.com/net-framework>
3. <https://www.tutorialspoint.com/asp.net/index.htm>

Course:	TOPICS (Credits : 02 Lectures/Week: 03)	
USCS407	Android Developer Fundamentals	
Objectives: To provide comprehensive insight into developing applications running on smart mobile devices and demonstrate programming skills for managing tasks on mobile. To provide a systematic approach for studying definition, methods and its applications for Mobile-App development.		

Expected Learning Outcomes:

- 1) Understand the requirements of the Mobile programming environment.
- 2) Learn about basic methods, tools and techniques for developing Apps
- 3) Explore and practice App development on Android Platform
- 4) Develop working prototypes of working systems for various uses in daily lives.

Unit	Old Syllabus	New Syllabus	Justification	No.Of Lectures
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Unit I	<p>What is Android?</p> <p>Obtaining the required tools, creating first android app, understanding the components of screen, adapting display orientation, action bar, Activities and Intents, Activity Lifecycle and Saving State, Basic Views: TextView, Button, ImageButton, EditText, CheckBox, ToggleButton, RadioButton, and RadioGroup Views, ProgressBar View, AutoCompleteTextView, TimePicker View, DatePicker View, ListView View, Spinner View</p>	<p>What is Android?</p> <p>History of Android, Android – Architecture,</p> <p>Obtaining the required tools, creating first android app, Android Debug Bridge (ADB),</p> <p>understanding the components of screen, adapting display orientation, action bar, Activities and Intents, Activity Lifecycle and Saving State, Basic Views: TextView, Button, ImageButton, EditText, CheckBox, ToggleButton, RadioButton, and RadioGroup Views, ProgressBar View, AutoCompleteTextView, TimePicker View, DatePicker View, ListView View, Spinner View</p>	<p>Addition:Information about History and Architecture about Android</p>	15L
Unit II	<p>User Input Controls, Menus, Screen Navigation, RecyclerView, Drawables, Themes and Styles, Material design, providing resources for adaptive layouts, AsyncTask</p>	<p>User Input Controls, Menus, Screen Navigation, RecyclerView, Drawables, Themes and Styles, Material design, providing resources for adaptive layouts, JSON and XML Parser, AsyncTask and AsyncTaskLoader, Volley, Retrofit,</p>	<p>Addition:Get detailed about JSON and XML parsing for data processing</p> <p>To Study Third party library to</p>	15L

	and AsyncTaskLoader, Connecting to the Internet, Broadcast receivers, Services, Notifications, Alarm managers, Transferring data efficiently	Connecting to the Internet, Broadcast receivers, Services, Notifications, Alarm managers, Transferring data efficiently	call API in Android	
Unit III	Data - saving, retrieving, and loading: Overview to storing data, Shared preferences, SQLite primer, store data using SQLite database, ContentProviders, loaders to load and display data, Permissions, performance and security, Firebase and AdMob, Publish your app	Data - saving, retrieving, and loading: Overview to storing data, Shared preferences, SQLite primer, store data using SQLite database, ContentProviders, loaders to load and display data, Permissions, performance and security, Firebase and AdMob, Publish your app	No Change	15L

Textbook(s):

- 1) “Beginning Android 4 Application Development”, Wei-Meng Lee, March 2012, WROX.

Additional Reference(s):

- 1) <https://developers.google.com/training/courses/android-fundamentals>
- 2) <https://www.gitbook.com/book/google-developer-training/android-developer-fundamentals-course-practicals/details>

Pedagogy: -

In the Android Developer Fundamentals course, you learn basic Android programming concepts

and build a variety of apps, using the Java programming language. You start with Hello World and work your way up to apps that schedule jobs, update settings, and use Android Architecture Components.

ICT Ref.: -

1. <https://developer.android.com/training/basics/firstapp>
2. <https://www.tutorialspoint.com/android/index.htm>
3. <https://material.io/resources/tutorials#android-java>
4. <https://www.tutlane.com/tutorial/android>
5. <https://www.javatpoint.com/android-tutorial>

Suggested List of Practical – SEMESTER IV

Course: USCSP401	(Credits : 03 Lectures/Week:09) USCS401+ USCS402+USCS403	
USCS401: Fundamentals of Algorithms		
<ol style="list-style-type: none"> 1. Write a Python program to perform matrix multiplication. Discuss the complexity of algorithms used. 2. Write a Python program to sort n names using Quick sort algorithm. Discuss the complexity of algorithms used. 3. Write a Python program to sort n numbers using Merge sort algorithm. Discuss the complexity of algorithms used. 4. Write a Python program for inserting an element into a binary tree. 5. Write a Python program for deleting an element (assuming data is given) from a binary tree. 6. Write Python program for checking whether a given graph G has simple path from source s to destination d. Assume the graph G is represented using adjacent matrix. 7. Write a Python program for finding the smallest and largest elements in an array A of size n using Selection algorithm. Discuss Time complexity. 8. Write a Python program for finding the second largest element in an array A of size n using Tournament Method. Discuss Time complexity. 9. Write a Python program for implementing Huffman Coding Algorithm. Discuss the complexity of algorithms. 10. Write a Python program for implementing Strassen's Matrix multiplication using Divide and Conquer method. Discuss the complexity of algorithms. 		
USCS402: Advanced JAVA		
<ol style="list-style-type: none"> 1. Develop the presentation layer of Library Management software applications with suitable menus. 2. Design suitable database for Library Management System. 3. Develop business logic layer for Library Management System. 4. Develop a Java application to store images in a database as well as retrieve images from the database. 		

5. Write a Java application to demonstrate servlet life cycle.
6. Design database for student administration. Develop servlet(s) to perform CRUD operations.
7. Create Employees table in EMP database. Perform select, insert, update, and delete operations on the Employee table using JSP.
8. Write a Student class with three properties. The useBean action declares a JavaBean for use in a JSP. Write a Java application to access JavaBeans Properties.
9. Design application using Struts2. Application must accept user name and greet user when command button is pressed.
10. Write a Java application to demonstrate hibernate .

USCS403: Computer Networks

1. Understanding the working of NIC cards, Ethernet/Fast Ethernet/Gigabit Ethernet.
2. Crimping of Twisted-Pair Cable with RJ45connector for Straight-Through, Cross-Over, Roll-Over.
3. To understand their respective role in networks/internet.
4. Problem solving with IPv4, which will include the concept of Classful addressing. (supportive Hint: use Cisco Binary Game)
5. Using linux-terminal or Windows-cmd, execute the following networking commands and note the output: *ping*, *tracert*, *netstat*, *arp*, *ipconfig*.
6. Using **Packet Tracer**, create a basic network of two computers using appropriate network wire.
7. Using **Packet Tracer**, connect multiple (min.6) computers using layer 2 switch.
8. Using **Packet Tracer**, connect a network in triangular shape with three layer two switches and every switch will have four computers. Verify their connectivity with each other.
9. Using **Packet Tracer**, create a wireless network of multiple PCs using appropriate access points.
10. Using **Wireshark**, network analyzer, set the filter for ICMP, TCP, HTTP, UDP, FTP and perform respective protocol transactions to show/prove that the network analyzer is working.

Course: USCSP402	(Credits : 03 Lectures/Week:09) USCS405+ USCS406+ USCS407	
USCS405: Linear Algebra using Python		
<ol style="list-style-type: none"> Write a program which demonstrates the following: <ul style="list-style-type: none"> Addition of two complex numbers Displaying the conjugate of a complex number Plotting a set of complex numbers Creating a new plot by rotating the given number by a degree 90, 180, 270 degrees and also by scaling by a number $a=1/2$, $a=1/3$, $a=2$ etc. Write a program to do the following: <ul style="list-style-type: none"> Enter a vector u as a n-list Enter another vector v as a n-list Find the vector $au+bv$ for different values of a and b Find the dot product of u and v Write a program to do the following as a linear combination of u and v i.e. $au+bv$ for a and b in \mathbb{R}. Write a program to do the following: <ul style="list-style-type: none"> Enter an r by c matrix M (r and c being positive integers) Display M in matrix format Display the rows and columns of the matrix M Find the scalar multiplication of M for a given scalar. Find the transpose of the matrix M. Write a program to do the following: <ul style="list-style-type: none"> Find the vector –matrix multiplication of a r by c matrix M with a c-vector u. Find the matrix-matrix product of M with a c by p matrix N. Write a program to enter a matrix and check if it is invertible. If the inverse exists, find the inverse. Write a program to convert a matrix into its row echelon form. 		

8. Write a program to do the following:
 - Enter a positive number N and find numbers a and b such that $a^2 - b^2 = N$
 - Find the gcd of two numbers using Euclid's algorithm.
9. Write a program to do the following:
 - Enter a vector b and find the projection of b orthogonal to a given vector u .
 - Find the projection of b orthogonal to a set of given vectors
10. Write a program to enter a given matrix and an eigenvalue of the same. Find its eigenvector.

USCS406: .NET Technologies

1. Write C# programs for understanding C# basics involving

a. Variables and Data Types	b. Object-Based Manipulation
c. Conditional Logic	d. Loops
	e. Methods
2. Write C# programs for Object oriented concepts of C# such as:

a. Program using classes	b. Constructor and Function Overloading
c. Inheritance	d. Namespaces
3. Design ASP.NET Pages with
 - a. Server controls.
 - b. Web controls and demonstrate the use of AutoPostBack
 - c. Rich Controls (Calendar / Ad Rotator)
4. Design ASP.NET Pages for State Management using

a. Cookies	b. Session State	c. Application State
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5. Perform the following activities
 - a. Design ASP.NET page and perform validation using various Validation Controls
 - b. Design an APS.NET master web page and use it on other (at least 2-3) content pages.
 - c. Design ASP.NET Pages with various Navigation Controls
6. Performing ADO.NET data access in ASP.NET for

a. Simple Data Binding	b. Repeated Value Data Binding
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7. Design ASP.NET application for Interacting (Reading / Writing) with XML documents
8. Design ASP.NET Pages for Performance improvement using Caching
9. Design ASP.NET application to query a Database using LINQ
10. Design and use AJAX based ASP.NET pages.

USCS407:Android Developer Fundamentals

1. Install Android Studio and Run Hello World Program.
2. Create an android app with Interactive User Interface using Layouts.
3. Create an android app that demonstrates working with TextView Elements.
4. Create an android app that demonstrates Activity Lifecycle and Instance State.
5. Create an android app that demonstrates the use of Keyboards, Input Controls, Alerts, and Pickers.
6. Create an android app that demonstrates the use of an Options Menu.
7. Create an android app that demonstrates Screen Navigation Using the App Bar and Tabs.
8. Create an android app to Connect to the Internet and use BroadcastReceiver.
9. Create an android app to show Notifications and Alarm manager.
10. Create an android app to save user data in a database and use of different queries.

Evaluation Scheme

I. Internal Exam-40 Marks

(i) Test– 20 Marks

- 20 marks Test – Duration 50 mins
- It will be conducted either using any open source learning management system such as
- Moodle (Modular object-oriented dynamic learning environment)Or a test based on an equivalent online course on the contents of the concerned course(subject)offered by or build using MOOC (Massive Open Online Course)platform.

(ii) 20 Marks –

Assignment based on some of the self learning topic from syllabus.(Assignment- Question Answer from/PPT presentation /Seminar in the class etc)

I. External Exam– 60 Marks

II. Practical Exam – 50 Marks

- Each course carry 50 Marks : 40 marks + 05 marks (journal) + 05 marks (viva)
- Minimum 75 % practical from each paper are required to be completed and written in the journal.

(Certified Journal is compulsory for appearing at the time of Practical Exam)

Academic Council dated 20th May, 2021 as per Item Number: 2.03



**DOMBIVLI SHIKSHAN PRASARAK MANDAL'S,
K.V. PENDHARKAR COLLEGE OF ARTS, SCIENCE AND
COMMERCE,
(AUTONOMOUS) DOMBIVLI (EAST).**

Faculty of Arts

DEPARTMENT OF ENGLISH

(Programme: Bachelor of Arts B.A.)

Credit based semester and grading system

SYLLABUS FOR

S. Y. B.A (Semester III and IV)

Choice Based Credit System (CBCS)

(with effect from the Academic Year: 2022-2023)

Dombivli Shikshan Prasarak Mandal's

**K.V.Pendharkar College of Arts, Science and
Commerce**

**(Autonomous) Dombivli (East)
Syllabus for S.Y.B.A. in English (Ancillary)**

Program: B.A.

Course: Indian Literature in English

Paper II

(Choice Based Credit System with effect from the Academic Year 2022-2023)

1. Syllabus as per Choice Based Credit System

i) Name of the Program	: S.Y.B.A. English (Ancillary)
	Semester III and IV
ii) Course Code	: PUAENG22-301 & PUAENG22-401
iii) Course Title	: Indian Literature in English
	Paper II
	Semester III: (Essay, Novel and Short Story)
	Semester IV: (Essay, Poetry and Drama)
Semester wise Course Contents	: Enclosed in the Syllabus
v) References and additional references	: Enclosed in the Syllabus
vi) Credit structure	: No. of Credits per Semester – 03
vii) No. of lectures per Unit	: 15
viii) No. of lectures per week	: 03
2. Scheme of Examination	: 4 Questions of 15 marks each
3. Special notes, if any	: No
4. Eligibility, if any	: No
5. Fee Structure:	As per University Structure
6. Special Ordinances / Resolutions, if any	: No

S.Y.B.A. English (Ancillary)

Course Title: Indian Literature in English

Paper II

(60:40 Marks Examination Pattern)

Course Objectives:

1. To introduce learners to the uniqueness of Indian Literature in English
2. To acquaint learners to the pluralistic dimensions of Indian Literature in English
3. To help them understand the different genres of Indian Literature in English
4. To familiarize learners with different perspectives of approaching this literature
5. To make learners aware of prominent Indian Writers in English

Course Outcomes:

After successful completion of this course students will be able-

- i. To understand the uniqueness of Indian Literature in English
- ii. To recognize the culture and context of the work of literature
- iii. To develop sensitivity to nature and fellow human beings
- iv. To be friendly with different genres of Indian Literature in English
- v. To explore and identify different perspectives of approaching this literature

Sr. No.	Units	Lectures (45)
UNIT-I	<p>i. Essays (Indian Non-Fiction in English) <i>i.</i> Meenakshi Mukherjee: "The Anxiety of Indianness" from <i>The Perishable Empire: Essays on Indian Writing in English.</i></p> <p><i>ii.</i> Urvashi Butalia: "Memory" from <i>The Other Side of Silence: Voices from the Partition of India</i></p> <p><i>iii.</i> K. Satchidanandan: "That Third Space: Interrogating the Diasporic Paradigm" from <i>Indian Literature</i>, Vol 45, No.3 (203) (May-June 2001)</p> <p><i>iv.</i> Jasbir Jain: "Prologue" from <i>beyond postcolonialism: dreams and realities of a nation.</i></p>	15

Unit 2	i. Anita Desai: <i>Fasting, Feasting</i> . Penguin Random House. OR ii. Saradindu Bandyopadhyay: <i>The Quills of the Porcupine</i> - a novella from <i>The Menagerie and Other Byomkesh Bakshi Mysteries</i> . Translated from the Bengali by Sreejata Guha. Penguin.	15 Lectures
Unit 3	i. Bhisham Sahani : "Pali" (from <i>Translating Partition</i> . Katha, New Delhi, 2001) ii. Kamala Das: "A Home near the Sea" (the short stories of kamala das : World literature written in English by M. Elias) 1985, Vol. 25, No-2. iii. Githa Hariharan : "The Remains of the Feast" (from https://newint.org) iv. Shashi Deshpande : "A Liberated Woman" (from <i>Collected Stories, Vol. 1</i> , Penguin Books India Pvt. Ltd. New Delhi, 2003.	15 Lectures

Evaluation Pattern:

Third Semester End Examination Duration: 2 Hours Marks: 60

Question 1: Essay on Unit 1 (one out of two)

(a-Essay or b-Essay or c- two short notes) :15 Marks

Question 2: Essay on Unit 2 (one out of two) : 15 Marks

Question 3: Essay on Unit 3 (one out of two) : 15 Marks

Question4: Short Notes on Unit 4 (two out of four) :15 Marks

Semester IV	Paper II	Credits 3
Course Title: Indian Literature in English – (Essay, Poetry and Drama)		

Total Lectures: 45

Unit 1	Essays (Indian Non-Fiction in English) i. Makarand Paranjape: Introductory essay to <i>Indian Poetry in English</i> . 1993. Madras: Macmillan India Press. ii. Arjun Dangle: "Dalit Literature: Past, Present and Future" from <i>Poisoned Bread</i> . 1992. Hyderabad: Orient Longman Ltd.	15 Lectures
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	<p>iii. Vijay Tendulkar: “Characterization and Structure: Two Essentials for a Playwright” from <i>Collected Plays in Translation</i>. 2003. New Delhi: OUP.</p> <p>iv. Rajeswari Sunder Rajan: “English Literary Studies, Women’s Studies and Feminism in India”. Source: <i>Economic and Political Weekly</i>, Vol 43. No. 43 (Oct. 25-31, 2008).</p>	
Unit 2:	<p>Poetry:</p> <p>i. Jayanta Mahapatra : ‘Hunger’ and ‘Freedom’</p> <p>ii. Keki Daruwalla : ‘Map-Maker’ and ‘A Take-Off on a Passing Remark’</p> <p>iii. Meena Kandasamy : ‘Ekalavyan’ and ‘The Flight of Birds’</p> <p>iv. Dilip Chitre : ‘Father Returning Home’ and ‘Ode to Bombay’</p>	15 Lectures
Unit 3:	<p>Drama:</p> <p>Vijay Tendulkar : Kamala (Aurora Metro Press: 2003)</p> <p>OR</p> <p>Ivram Indrajit translated by Girish karnad, (Oxford University Press. 1974)</p>	15 Lectures

**Evaluation Pattern
For S.Y.B.A.
Indian Literature in
English(Theory)**

1.	INTERNAL ASSESSMENT	40 Marks
1.1	One class test	20 Marks
1.2	Assignment/ Project/ Presentation	15 Marks
1.3	Active Participation, Overall performance	05 Marks

Fourth Semester End Examination	Duration: 2 Hours	Marks: 60
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Question 1: Essay on Unit 1 (one out of three)

(a-Essay or b-Essay or c- two short notes) :15 Marks

Question 2: Essay on Unit 2 (one out of two) :15 Marks

Question 3: Essay on Unit 3 (one out of two) :15 Marks

Question4: Short Notes on Unit 2 and 3 (two out of four) :15 Marks

References:

1. Agrawal, Anju Bala. 2010. *Post-Independence Indian Writing in English (Vols. I and II)*. Delhi: Authorspress.
2. Agarwal, Beena. 2012. *Contemporary Indian English Drama: Canons and Commitments*. Jaipur: Aadi Publications.
3. Agarwal, Smita,ed. 2014. *Marginalized: Indian Poetry in English*. New York: Rodopi.7
4. Ahmad, Aijaz. 1996. *In Theory: Classes, Nations, Literatures*. Delhi: Oxford University Press.
5. Basu, Tapan, ed. 2002. *Translating Caste*. New Delhi: Katha.
6. Bhattacharya, Gargi. “(De) Constructing an Aesthetics of Indian Writing in English”. *Muse India*, Issue 70 (Nov-Dec 2016)
<http://www.museindia.com/regularcontent.asp?issid=32&id=2049>
7. Daruwalla, Keki, ed. 1980. *Two Decades of Indian Poetry 1960-1980*. Delhi: Vikas Publishing.
8. Dharwadker, Vinay and A.K. Ramanujan, eds. 1994. *The Oxford Anthology of Modern Indian Poetry*. Delhi: Oxford University Press.
9. Gopal, Priyamvada.2009. *The Indian English Novel: Nation, History, and Narration*. Oxford University Press.
10. Iyengar, Srinivasa. 1985. *Indian Writing in English*, 5th ed. New Delhi: Sterling Publishers.
11. Jain, Jasbir. 2002. *Gender and Narrative*. New Delhi: Rawat Publications.
12. Jain, Jasbir. 2004. *Dislocations and Multiculturalism*. Jaipur: Rawat Publications.

13. Jain, Jasbir. 2006. *beyond postcolonialism: dreams and realities of a nation*. Jaipur: Rawat Publications.
14. Joshi, Priya. 2003. *In Another Country: Colonialism, Culture and the English Novel in India*. New Delhi: Oxford University Press. 8
15. Kambar, Chandrasekhar. 2000. *Modern Indian Plays. Vols. 1 & 2*. New Delhi: National School of Drama.
16. Karnad, Girish. 1995. "Author's Introduction" in *Three Plays*. Delhi: OUP.
17. King, Bruce. 2001. *Modern Indian Poetry in English*. Revised Edition. Oxford University Press.
18. Kushwaha, M.S. 1984. *Dimensions of Indian English Literature*. New Delhi: Sterling Publishers Pvt. Ltd.
19. Mittal, R.K. 2013. *Problems of Indian Creative Writing in English*. New Delhi: Kumud Publishers.
20. Mishra, V. 2008. *Literature of the Indian Diaspora*. London: Routledge.
21. Mouli, T. Sai Chandra. 2011. *Multicultural Theatre and Drama*. New Delhi: Authorspress.
22. Mukherjee, Meenakshi. 2002. *The Perishable Empire: Essays on Indian Writing in English*. New Delhi: Oxford University Press.
23. Mukherjee, Meenakshi. 1994. *Realism and reality: The Novel and Society in India*. New Delhi: Oxford University Press.
24. Mukherjee, Meenakshi. 1971. *The Twice-Born Fiction: Themes and Techniques of the Indian Novel in English*. University of Michigan: Heineman Educational Books.
25. Naik, M.K. 1977. *Critical Essays on Indian Writing in English*. Madras: Macmillan.
26. Naik, M.K. 1979. *Aspects of Indian Writing in English*. Delhi: Macmillan.
27. Naik, M.K. 1982. *History of Indian English Literature*. New Delhi: Sahitya Akademi.

28. Naik, M.K. 1984. *Dimensions of Indian English Literature*. New Delhi: Sterling Publishers Pvt. Ltd.
29. Panikker, K. Ayyappa. 1991. *Indian English Literature Since Independence: Golden Jubilee Vol.1940-1990*. New Delhi: The Indian Association for English Studies.
30. Paranjape, Makarand. 1993. *Indian Poetry in English*. Macmillan India Ltd.
31. Paranjape, Makarand. "Indian (English) Criticism: Some Notes." *Indian Literature*, Vol. 37, No. 2 (160) (March-April, 1994), pp. 70-78. Print.
38. Shaikh, F.A. 2009. *New Perspectives on Indian Writing in English*. New Delhi: Sarup and Sons.
39. Viswanathan, Gauri. 1989. *Masks of Conquest : Literary Study and British Rule in India*. New Delhi: Oxford University Press.
40. Walsh, William. 1990. *Indian Literature in English*. London: Longman.

Useful Links and YouTube videos

<https://www.youtube.com/watch?v=cvBNzvVIZlc>

<https://www.youtube.com/watch?v=tpibUVAxCDU>

<https://www.youtube.com/watch?v=w8LLmZ09HRg>

<https://www.youtube.com/watch?v=hAxfmbthIw>

<https://www.youtube.com/watch?v=3LC6BEqgCoc>

<https://www.youtube.com/watch?v=7kYwnqGB48E>

<https://www.youtube.com/watch?v=UHC1Clrlg1w>

https://www.youtube.com/watch?v=NKjvBv_ndL8

<https://www.youtube.com/watch?v=A-vFqNWymm0>

https://www.youtube.com/watch?v=PKpV_I0Q3oQ

List of MOOCs

Postcolonial Literature

<https://www.class-central.com/university/iitk>

Write a Killer Literature Review

<https://www.udemy.com/write-a-killer-literature-review/?siteID=SAyYsTvLiGQ-9O7.BTcWuBTLe8NsMyFzyQ&LSNPUBID=SAyYsTvLiGQ>

Tell Your Story in English: Reading & Writing Skills for Language Learners

<https://www.class-central.com/mooc/6119/canvas-network-tell-your-story-in-english-readingwriting-skills-for-language-learners>

Literary Theory and Criticism

<https://www.class-central.com/mooc/7982/nptel-literary-theory-and-literary-criticism>

Dombivli Shikshan Prasarak Mandal's

**K.V.Pendharkar College of Arts, Science and
Commerce**

**(Autonomous) Dombivli (East)
Syllabus for S.Y.B.A. in English (Ancillary)**

Program: B.A.

**Course: American
Literature**

Paper III

(Choice Based Credit System with effect from the Academic Year 2022-2023)

1. Syllabus as per Choice Based Credit System

- i) Name of the Program : S.Y. B.A. English (Ancillary)
Semester III and IV
- ii) Course Code : PUAENG22-302 & PUAENG22-402
- iii) Course Title : **American Literature, Paper III**
- iv) Semester wise Course Contents : Enclosed the copy of the syllabus
- v) References and additional references : Enclosed in the Syllabus
- vi) Credit structure : No. of Credits per Semester - 03
- vii) No. of lectures per Unit : As mentioned in the syllabus
- viii) No. of lectures per week : 03
- 2. Scheme of Examination :** 4 Questions of 15 marks each
- 3. Special notes, if any :** No
- 4. Eligibility, if any :** No
- 5. Fee Structure :** As per University Structure
- 6. Special Ordinances / Resolutions, if any :** No

S.Y.B.A. English (Ancillary)

Paper III

Course Title: American Literature

(60:40 Marks Evaluation Pattern)

Course Objectives:

1. To acquaint the learners of literature with the various genres and literary terms of twentieth century American Literature
2. To sensitize them to the themes and styles of American Literature
3. To introduce them to the socio-cultural milieu of twentieth century America through literary texts
4. To enhance their understanding of American, African American and Multicultural sensibilities by introducing them to the literary works representing them
5. To facilitate cross-cultural perspectives and discussions on American Literature

Course Outcomes:

After successful completion of this course students will be able-

- i. To understand the uniqueness of American Literature
- ii. To recognize the culture and context of the work of American literature
- iii. To develop sensitivity to nature and fellow human beings
- iv. To be friendly with different genres of American Literature
- v. To explore and identify different perspectives of approaching American literature

Semester III		Paper III	3 Credits
Course Title:		American Literature – (Short Story and Novel)	
Sr. No.	Units Terms	Lectures	
		(45)	
UNIT i.	Naturalism in 20th Century American Fiction	15	
-I ii.	Lost Generation Writers		

	iii. African American Fiction iv. Jewish American Fiction v. Literature of Chinese-American Diaspora vi. Literature of Indian Diaspora in America	
	UNIT Novel - Toni Morrison: <i>The Bluest Eye</i> -II OR Ernest Hemingway: <i>Farewell to Arms</i>	15
-III	UNIT Short Stories- i. John Steinbeck – “The Chrysanthemums” (http://myweb.dal.ca/dheavans/2034/Readings/Chrysanthemums.p d) ii. Alice Walker – “Everyday Use” (https://www.deanza.edu/faculty/leonardamy/Everyday%20Use.p df) iii. Amy Tan – “Two Kinds” (http://s3.amazonaws.com/scschoollfiles/400/two_kinds_by_amy_t an.pdf) iv. Bernard Malamud – “The German Refugee” (moodle2.beitberl.ac.il/pluginfile.../Bernard_Malamud_- _The_German_Refugee.pdf) v. Jhumpa Lahiri – “Unaccustomed Earth” (from <i>Unaccustomed Earth</i> , Penguin Random House, 2009.)	15

Evaluation Pattern
For S.Y.B.A.
American Literature
(Theory)

1.	INTERNAL ASSESSMENT	40 Marks
1.1	One class test	20 Marks
1.2	Assignment/ Project/ Presentation	15 Marks
1.3	Active Participation, Overall performance	05 Marks

Third Semester End Examination	Duration: 2 hours	Marks:60
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Question 1: Essay on Unit 1 (one out of three)

(a-Essay or b-Essay or c- two short notes) :15 Marks

Question 2: Essay on Unit 2 (one out of two) :15 Marks

Question 3: Essay on Unit 3 (one out of two) :15 Marks

Question4: Short Notes on Unit 2 and 3 (two out of four) :15 Marks

Semester IV	Paper III	3 Credits
American Literature – (Poetry and Drama)		

Total Lectures: 45

Sr. No.		Lectures (45)
UNIT- Terms		15
I	i. American Dream, ii. Confessional Poetry iii. Expressionism in American Drama iv. African American Poetry of the 20th century v. African American Drama of the 20th Century vi. Broadway and Off Broadway Theatre	
UNIT- Play –		15
II Eugene O’ Neill : The Emperor Jones		
	or	
	Lorraine Hansberry : <i>Raisin in the Sun</i>	
	UNIT- Poems	15
	III Langston Hughes: ‘Mother to Son’ ‘Democracy’ ‘Dream Deferred’ Sylvia Plath: ‘Mirror’ ‘I am Vertical’ ‘Tulips’	

Evaluation Pattern:

Third Semester End Examination	Duration: 2 hours	Marks:60
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Question 1: Short notes (Three out of five) :15 Marks

Question 2: Essay on Unit 2 (one out of two) :15 Marks

Question 3: Essay on Unit 3 (one out of two) :15 Marks

Question 4: Short Notes on Unit 2 and 3 (two out of four) :15 Marks

References:

1. Abrams, M. H. *A Glossary of Literary Terms*. (8th Edition) New Delhi: Akash Press, 2007.
2. Baldick, Chris. *The Oxford Dictionary of Literary Terms*. Oxford: Oxford University Press, 2001.
3. Bloom, Harold, ed. *Short Story Writers and Short Stories*. New York: Chelsea House, 2005.
4. Boyars, Robert, ed. *Contemporary Poetry in America*. New York: Schocken, 1974.
5. Cook, Bruce. *The Beat Generation*. New York: Scribners, 1971.
6. Gould, Jean. *Modern American Playwrights*. New York: Dodd, Mead, 1966.
7. Fowler, Roger. Ed. *A Dictionary of Modern Critical Terms*. Rev. ed. London: Routledge & Kegan Paul, 1987.
8. Harmon, William; Holman, C. Hugh. *A Handbook to Literature*. 7th ed. Upper Saddle River, NJ: Prentice-Hall, 1996.
9. Henderson, Stephen, ed. *Understanding the New Black Poetry*. New York: William Morrow, 1973.
10. Hoffman, Daniel, ed. *Harvard Guide to Contemporary Writing*. Cambridge, Mass.: Harvard University Press, 1979.
11. Hudson, William Henry. *An Introduction to the Study of Literature*. New Delhi: Atlantic, 2007.
12. Kernan, Alvin B., ed. *The Modern American Theater*. Englewood Cliffs, N. J.: Princeton Hall, 1967.

13. Lawrence, Shaffer. *History of American Literature and Drama*. New Delhi: Sarup, 2000.
14. Lewis, Allan. *American Plays and Playwrights of the Contemporary Theatre*. Rev. Ed. New York: Crown, 1970.
15. Moore, Harry T., ed. *Contemporary American Novelists*. Carbondale: Southern Illinois University Press, 1964.
16. Rosenblatt, Roger. *Black Fiction*. Cambridge, Mass.: Harvard University Press, 1974.
17. Scholes, Robert. *Radical Sophistication: Studies in Contemporary Jewish American Novelists*. Athens: Ohio University Press, 1969.
18. Vendler, Helen. *Part of Nature, Part of Us: Modern American Poets*. Cambridge, Mass.: Harvard University Press, 1980.
19. Voss, Arthur. *The American Short Story: A Critical Survey*. Norman: Univ. of Oklahoma Press, 1980.