

**SIES COLLEGE OF ARTS, SCIENCE AND COMMERCE (AUTONOMOUS)
SION (W), MUMBAI – 400 022**

Open-Elective Courses Offered By Unaided Departments (2023-24)

SEMESTER - I

1. Course offered by Department of Biotechnology

Course Code	Title	Credits	Lectures
SIUBTOE111	FOOD AND NUTRITION	4	
Course Outcomes	On successful completion of the course, the student will be able to <ul style="list-style-type: none"> Understand the concepts of human nutrition, basic and advanced concepts of complementary nutrition, nutrition for fitness and exercise and food psychology. 		
Unit I	Human nutrition Carbohydrates: Overview of Classification, Functions Carbohydrate recommendations, Glycemic Index and Glycemic Load, Sugar substitutes-Nutritive and non - nutritive sweeteners Synthetic and Natural sweeteners Fats and Fatty acids: Overview of Classification, Functions RDAs of total dietary fat and fatty acid consumption Fatty acid ratios, SFA, MUFA & PUFAs in health & disease Proteins and Amino acids- Overview of Classification, Functions, Essential Amino acid requirements and AA imbalances, Vitamins and minerals: Overview of Classification, Functions	1	15
Unit II	Complementary Nutrition- Basic and advanced aspects Classification, Health benefits, Mechanism of action, sources & recommendations of Prebiotics, Probiotics and Synbiotics - Types, Sources of prebiotics and probiotics, Health benefits, Regulations Bioactive Dietary Components, Functional foods, Phytochemicals, Flavonoids, Phytoestrogens , Meal Replacers, - Classification, Health benefits, Mechanism of action, Recommendations & concerns, Functional foods, Organic foods, Convenience foods	1	15
Unit III	Nutrition For Exercise & Fitness Definition and domains of fitness-Physical, Mental, Social & Spiritual domains of fitness, Components of physical fitness Health oriented components -cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition. Skill oriented components-agility, balance, coordination, power, reaction time, and speed -Factors influencing Physical fitness - Role of exercise and nutrition in Physical fitness, Psychological Fitness- stress- Causes, consequences & strategies of management Nutrition and Physical Fitness in sports persons Classification of sports activities	1	15

	Body Composition of Sports Persons Energy metabolism during Exercise (aerobic and anaerobic)		
Unit IV	<p>Food Psychology The psychology of food choices and eating behavior-Models of food choice, Influences on food choice Social and psychological models of food choice- Role of family and peers, Food and Culture, Mood, emotions and food choice, Food cravings and addiction, Food Rewards, Influences of Media on food choice, Role of stress in choosing foods, Alcohol and tobacco use and abuse</p> <p>Behavior modification strategies to influence food and nutrition choices in disease conditions- Obesity - Behavioral phenotype in obesity, mindful eating, Diabetes, Allergies Psychology of the food and nutrition consumer- The psychology of the food shopper Factors affecting food purchase Food quality and consumer expectations, Packaging and labeling based on the psychology of the consumer, Ethnic, religious and economic influences on food choice of the consumer, Consumer perception of processed foods, supplements, organic and genetically modified foods</p>	1	15

2. Course offered by Department of Data Science

Course Code	Title	Credits	Lectures
SIUDSOE111	DATA MANAGEMENT IN EXCEL	2(T) + 2(P)	
Course Outcomes	<p>CO1. Learning the use and utility of functions and formulas on excel. CO2. Manipulate data using data names and ranges, filters and sort, and validation lists CO3. Analyzing data using Pivot Tables and Pivot Chart.</p>		
Unit I	<p>Introduction to Excel :About Excel & Microsoft, Uses of Excel, Excel software, Spreadsheet window pane, Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, the Ribbon, File Tab and Backstage View, Formula Bar, Workbook Window, Status Bar, TaskPane, Workbook & sheets.</p> <p>Columns & Rows: Selecting Columns & Rows, Changing Column Width & Row Height, Autofitting Columns & Rows, Hiding/Unhiding Columns & Rows, Inserting & Deleting Columns& Rows, Cell, Address of a cell, Components of a cell – Format, value, formula, Use of paste and paste special.</p> <p>Functionality Using Ranges: Using Ranges, Selecting Ranges, Entering Information Into a Range, Using AutoFill.</p> <p>Performing Calculations on Data: Naming Groups of Data , Creating Formulas to calculate values, Summarizing Data that meets specific conditions, Finding and Correcting Errors in Calculations.</p>	1	15

	<p>Focusing on Specific Data by using Filters: Limiting Data that appears on screen, Manipulating worksheet data, Selecting list rows at random, summarizing worksheets with hidden and filtered rows, finding unique values within data set, Defining valid sets of values for ranges of cells</p>		
Unit II	<p>Reordering and Summarizing Data: Sorting worksheet data, Organizing data into levels , Looking up information in a worksheet.</p> <p>Analyzing Alternative Data Sets: Defining an alternative Data Set , Defining Multiple alternative Data Set, Varying Data to Get a Desired Result by using Goal Seek , Finding Optimal Solutions by Using Solver , Analyzing Data by using Descriptive Statistics.</p> <p>Creating Dynamic Worksheets by Using Pivot Tables: Analyzing Data Dynamically by Using PivotTables, Filtering, Showing, and Hiding PivotTable Data, Editing PivotTables, Formatting PivotTables, Creating PivotTables from External Data.</p> <p>Creating Charts and Graphics : Creating Charts, Customizing the Appearance of Charts, Finding Trends in Data , Summarizing Data by Using Sparkline, Creating Dynamic Charts by Using PivotCharts, Creating Diagrams by Using SmartArt, Creating Shapes and Mathematical Equations.</p> <p>Printing : Adding Headers and Footers to Printed Pages, Preparing Worksheets for Printing, Printing Worksheets.</p>	1	15

List of Practicals – 2 Credits

1	<ol style="list-style-type: none"> i. Enter data into a Spreadsheet ii. Use AutoFill with labels, data and formulas iii. Format Cell Borders and Contents iv. Calculate the total across the rows v. Calculate the total for each column
2	<p>Create worksheet with following fields Empno, Ename, Basic Pay(BP), Travelling Allowance(TA), Dearness Allowance(DA), House Rent Allowance(HRA), Income Tax(IT), Provident Fund(PF), Net Pay(NP)</p> <ol style="list-style-type: none"> i. Given: DA= 30% of BP, HRA=20% of BP, TA=17.5% of BP, IT=15% of BP, PF=12.5% of BP ii. Calculate the Net Pay by using the formulae iii. Gross Pay= DA+TA+HRA+BP iv. Deductions=IT+PF v. Net Pay= Gross Pay-Deduction
3	<p>Create an Excel Worksheet with fields as Roll no. , Name ,Marks of Fivesubjects.</p> <ol style="list-style-type: none"> i. Find the Total Number & Average in all Subjects in Each Student. ii. Find Grade Using If Function - If Average Greater >15 then "A" Grade otherwise "B" Grade. iii. How Many Students "A" and "B" Grade ?

	iv. How Many Students in any two subjects Number Grater Then > 20 and <15 ? v. Represent the Data by inserting the Pie Chart
4	Create an Excel Worksheet to apply Text Function on Full Name of the person. i. Calculate First Name ii. Calculate Last Name iii. Calculate Email id
5	Create an Excel Worksheet with fields Roll no, Name , Marks i. Use hlookup function to display student's name ii. Use vlookup function to find the computer score of the students
6	Create an Excel Worksheet with fields ordered, product, category(fruit,vegetable), amount, date and county. i. Create Pivot Table using Data Separate Fruit and Vegetable. ii. How many Fruit and Vegetable Items in a List? iii. Total Apple and Banana amount.
7	Create an Excel Worksheet to perform i. alphabetical sort ii. numerical sort iii. Date-Time iv. Specify the cell color v. Apply Icon to cell.
8	Create an Excel Worksheet to perform i. Text filter ii. Number filter
9	Create an Excel Worksheet to perform data validation i. Allow only numeric or text values in a cell. ii. Allow only numbers within a specified range. iii. Allow data entries of a specific. iv. Restrict dates and times outside a given time frame.
10	Create an Excel Worksheet to perform data validation i. Restrict entries to a selection from a drop-down list. ii. Validate an entry based on another cell. iii. Show an input message when the user selects a cell. iv. Show a warning message when incorrect data has been entered

3. Course offered by Department of Computer Science

Course:	Title	Lectures	Credits
SIUCSOE111	Basic Web Designing	2 per week (60 min per lec)	2
<p>Objectives: 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> <p>Expected Learning Outcomes:</p> <ul style="list-style-type: none"> • CO1: To design valid, well-formed, scalable, and meaningful pages using emerging technologies. • CO2: Understand the various platforms, devices, display resolutions, viewports, and browsers that render websites • CO3: To develop and implement client-side and server-side scripting language programs. 			

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 inHTML, Interactive Elements, Working with Multimedia - Audio and VideoFile Formats, HTML elements for inserting Audio / Video on a web page	15L	
Unit II	CSS: Understanding the Syntax of CSS, CSS Selectors, Inserting CSSin an HTML Document, CSS properties to work with background of a Page, CSS properties to work with Fonts and Text Styles, CSS propertiesfor positioning an element Bootstrap: What is Bootstrap, containers-fixed container, fixed- width container, grid system, typography- display headings, Colors- text colors, background colours, tables,images, jumbotron, alerts, buttons.	15L	
Course	Title	Lectures	Credits
SIUCSOE111	Practicals of Web Designing	4 per week (45 min per lec)	2
1	Design a web page which displays the map of India. Create a clickable region using an image map on the same image so that when we click on Maharashtra it opens another tab with information about Maharashtra. Create two more clickable regions forstates of your choice.		
2	A. Design a web page which contains three hyperlinks (audio,video, and gif image). I. When a user clicks on an audio link web page should open in the same tab withsome audio content. II. When a user clicks on a video web page should open in the same tab with somevideo content. III. When a user clicks on a gif image web-page should open in the same tab withsome gif content.		
3	Design a webpage to display nested ordered and unordered lists.		
4	Design a webpage to display the time table of your class.		
5	Design a webpage to display student registration forms.		
6	Design a webpage that makes use of Cascading Style Sheets with (Background,fonts, Text styles).		
7	Create webpage to showcase bootstrap containers		
8	Create webpage to showcase bootstrap table with buttons and images		

4. Course offered by Department of Environment Science

COURSE CODE	TITLE	CREDITS	LECTURES
SIUESOE111	ENVIRONMENT AND SOCIETY		
<p>Course Objective: To acquaint the students with concepts of societal movements for the environment. Learning Outcome: The students will be made aware of environmental issues at society level and also about the role of society in environment management.</p>			
Unit-I: Environment and Social Inequalities	<ul style="list-style-type: none"> • Social and cultural construction of ‘environment’; • Environmental thought from historical and contemporary perspective. • Inequalities of race, class, gender, region, and nation-state in access to healthy and safe environments. • Concept of ecological and social justice; • Environmental ethics. 	1	15
Unit II: Impact of anthropogenic activities on environment and society	Impact of following anthropogenic activities on environment and society: <ul style="list-style-type: none"> • Pollution • Industrialization • Urbanization • Deforestation • Mining • Developmental projects • Reclamation • Tourism 	1	15
Unit III: Man and Environment Management	<ul style="list-style-type: none"> • State, corporate, civil society, community, and individual-level initiatives to ensure sustainable development. • Case studies of environmental movements (Chipko Movement, Appiko Movement, Narmada Bachao Andolan). • Corporate responsibility movement. • Appropriate technology movement. • Environmental groups and movements, citizen groups 	1	15

Unit IV: Environment-society relationship	<ul style="list-style-type: none"> • Environment-society relationship; Development-induced displacement, resettlement, and rehabilitation: problems, concerns, and compensative mechanisms; discussion on Project Affected People (PAPs). • Impact of technology on environment; • Conflict between economic and environmental interests; • Community participation. • Environmental education and awareness. 	1	15
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5. Course offered by Department of Information Technology

COURSE CODE	TITLE	CREDITS 2(T) + 2(P)	LECTURES
SIUITOE111	Data Presentation and Visualization in MS PowerPoint		
<p>Course Objective: To help presenter to communicate more effectively by creating visually compelling presentations, and also enable them to highlight important information that they can use to persuade audiences.</p> <p>Learning Outcome: Upon completion of this course, student will be able to:</p> <p>CO1: Create and manipulate simple slide shows with outlines and notes.</p> <p>CO2: Create slide presentations that include text, graphics, animation, and transitions.</p> <p>CO3: Use various visualization techniques in power point presentations</p>			
Unit-I:	Basics of Powerpoint, Editing Slides, Working in Outline View, Proofing the presentations, Notes and Slide Show. Fonts and Text Formatting, Designing and animating the slides, Working with Slide Master	1	15
Unit II:	Inserting Pictures and Drawing on slides, Working with charts, Working with smartArt, Adding sound and video to the slides, Tables, hyperlinks and Action Buttons, Collaborating in the cloud with Office 365, Exporting your presentations to other formats, Data visualizations for power point.	1	15

List of Practical: 2 credits

Any 10 practical with respect to the syllabus topics.

6. Course offered by Department of Mass Media

Course Code	Title	Credits	Lectures
SIUMMOE111	INTRODUCTION TO MEDIA AND ENTERTAINMENT	4	
Course Outcomes	On completion of this course, students will be able to: <ul style="list-style-type: none"> • explain the concepts of media and entertainment • classify the role and forms of media and entertainment in society • discuss the media and communication theories • examine the trends in media and entertainment industry 		
Unit I	Introduction to Mass Media <ul style="list-style-type: none"> • Nature and importance of Mass Media • Mass Communication and Mass Media and Multimedia • Types of Mass Media • The role of mass media in entertainment 	1	15
Unit II	Media and Entertainment <ul style="list-style-type: none"> • The role of media and entertainment in society • The positive effects of media and entertainment on society • Function of media entertainment and media audiences • Categories in Entertainment: music, games, comedy, plays - performance, literature, and sport • Other forms of entertainment [live performance, games, comedy, literature, comedy, performance, storytelling, Theatre, Cinema, Film making, Dance, Circus, Animals] 	1	15
Unit III	Media Entertainment theory <ul style="list-style-type: none"> • Media and Communication • Lasswell's model of communication • Influence of Media and Uses and Gratification model • Cultivation Theory • Mood management theory • The 4Cs: content, conduit, convergence, consumption to reinvent strategies for emotional attachment with customers. • Types of audience engagement with entertainment 	1	15
Unit IV	New media and entertainment industry <ul style="list-style-type: none"> • Top 10 media and entertainment companies India and abroad [Comcast, WD, AT&T, Paramount Global, Sony, Fox] • The growth in Global media and entertainment industry: share, economic trends • The future of media and entertainment industry in India • The Creative media and entertainment • Careers in Media and Entertainment Investigate current trends and emerging practices in media and entertainment. • Assess the impact of globalization on media and entertainment businesses. 	1	15

	<ul style="list-style-type: none"> • Examine the marketing and promotional strategies used in the industry. • Develop critical thinking and analytical skills to evaluate industry practices and trends. 		
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7. Course offered by Department of Management Studies

Course Code	Title	Credits	Lectures
SIUMSOE111	FOUNDATION OF HUMAN SKILLS	4	
Course Outcomes	<p>On completion of this course, students will be able to:</p> <ul style="list-style-type: none"> • To understand inter and intra difference among individuals • To give overview of group behavior organizational conflicts and resolutions • To understand the different theories of Motivation. • To understand the organizational change with respect to organizational development and work stress. 		
Unit I	<p>Understanding of Human Nature</p> <ul style="list-style-type: none"> • Individual Behaviour: Concept of a man, individual differences, factors affecting individual differences, Influence of environment • Personality and attitude: Determinants of personality, Personality traits theory, Big five model, Personality traits important for organizational behaviour like authoritarianism, locus of control, Machiavellianism, introversion-extroversion achievement orientation , self – esteem, risk taking, self-monitoring and type A and B personalities, Concept of understanding self through JOHARI WINDOWS, Nature and components of attitude, Functions of attitude, Ways of changing attitude, Reading emotions • Thinking, learning and perceptions: Thinking skills, thinking styles and thinking hat, Managerial skills and development, Learning characteristics, theories of learning (classical conditioning, operant conditioning and social learning approaches), Intelligence, type (IQ, EQ, SQ, at work place), Perception features and factor influencing individual perception, Effects of perceptual error in managerial decision making at work place. (Errors such as Halo effect, stereotyping, prejudice attributional). 	1	15
Unit II	<p>Introduction to Group Behaviour</p> <ul style="list-style-type: none"> • Introduction to Group Behaviour • Group Dynamics: Nature, types, group behaviour model (roles, norms, status, process, structures) • Team effectiveness: nature, types of teams, ways of forming an effective team. • Setting goals. • • Organizational processes and system. 	1	15

	<ul style="list-style-type: none"> • Power and politics: nature, bases of power, politics nature, types, causes of organizational politics, political games. • Organizational conflicts and resolution: Conflict features, types, causes leading to organizational conflicts, levels of conflicts, ways to resolve conflicts through five conflicts resolution strategies with outcomes. 		
Unit III	<p>Organizational Culture and Motivation at workplace</p> <ul style="list-style-type: none"> • Organizational Culture: <ul style="list-style-type: none"> • Characteristics of organizational culture. • Types, functions and barriers of organizational culture • Ways of creating and maintaining effective organization culture • Motivation at workplace: <ul style="list-style-type: none"> • Introduction, Incentives • Concept of motivation • Theories of motivation in an organisational set up. • Maslow Need Heirachy • F.Hertzberg Dual Factor • Mc.Gregor theory X and theory Y. • Waysofmotivating through carrot (positive reinforcement) and stick (negative reinforcement) at workplace. 	1	15
Unit IV	<p>Organisational Change, Creativity and Development and Work Stress</p> <ul style="list-style-type: none"> • Organisational change and creativity: Concepts of organisational change, Factors leading/influencing organisational change, Kurt Lewins model of organisational change and development, Creativity and qualities of a creative person, Ways of enhancing creativity for effective decision making, Creative problem solving. • Organisational Development and work stress: Need for organisational development, OD Techniques, Stress, types of stress, Causes and consequences of job stress, Ways for coping up with job stress 	1	15

SEMESTER – II

1. Course offered by Department of Biotechnology

Course Code	Title	Credits	Lectures
SIUBTOE121	INTRODUCTION TO FORENSIC SCIENCE	4	
Course Outcomes	On successful completion of the course, the student will understand the basic concepts of forensic science, forensic medicine, medical law and ethics, forensic psychology and acts, and emerging trends in forensic science.		
Unit I	Fundamentals of Forensic Science History, Development and Fundamentals of Forensic Science, Definition and Origin of term “ <i>forensis</i> ” Nature, need and scope, Principles and laws of forensic science. Domains in Forensic Science divisions- ballistics, voice, audio-video, automobiles engineering Questioned documents division- (stylistics, linguistics, counterfeit), Cyber division, Fingerprint division (Prints and other impressions), Psychology (Criminal profiling, polygraphy, narco analysis, brain mapping)	1	15
Unit II	Essentials of Forensic Science Crime scene investigation and reconstruction, forensic photography. Forensic medicine: Introduction and forensic medicine and legal procedure. Medical law and ethics Personal identification. Medico legal autopsy, Thanatology, death, and its causes Stages of death, Instrumentation Basics of Microscopy, Chromatography - Paper, TLC, HPTLC, GC, HPLC; Basic Spectroscopy, UV-Visible spectrophotometer	1	15
Unit III	Forensic Psychology and Acts Narco-analysis- Theory, procedure, admissibility in court, prospects, merits, and demerits of the technique, Brain Mapping- Theory, procedure, admissibility in court, prospects, merits, and demerits of the technique, Polygraph- Theory, procedure, admissibility in court, prospects, merits, and demerits of the technique. Special Acts: Narcotic Drugs and Psychotropic Substance Act , 1985 IT Act, 2005 Wildlife Protection Act 1972	1	15
Unit IV	Emerging Trends in Forensic Science Brain mapping, polygraph, PCR, DNA fingerprinting, Digital Forensics, Computer Crimes- Definition Types of computer crimes, Cyber Crimes - Definition, Types of cyber-crimes, Computer security, Online security, Data retrieval	1	15

2. Course offered by Department of Data Science

Course Code	Title	Credits	Lectures
SIUDSOE121	DATA HANDLING USING MySQL	2(T) + 2 (P)	
Course Outcomes	Upon completion of this course, student will be able to: CO1: Gain familiarity with the MySQL development environment CO2: Understand basic concepts of database development: SQL, Database design and Administration. CO3: Design and code a database solution		
Unit I	Introduction: Why is MySQL so Popular, Elements of MySQL and Its Environment , Installing MySQL : Installation Choices and Platforms , Using the command-line Interface , Using a Text Editor , Installing Under Windows. Modeling and Designing Databases : The database design process. Basic SQL: SELECT statement, INSERT statement , DELETE statement , UPDATE statement, Exploring Database and Tables with SHOW and mysqlshow. Working with Database Structures: Creating and using Database , Creating Tables, Altering Structures , Renaming Tables, Dropping Tables, Truncating Tables, Backing Up and Restoring databases.	1	15
Unit II	Advanced Querying: Aggregating Data ,Nested Queries , User Variables , Transactions and Locking , Table Types. Functions – String Functions (concat, instr, left, right, mid, length, lcase/lower,ucase/upper, replace, strcmp, trim, ltrim, rtrim), Math Functions (abs, ceil, floor, mod,pow, sqrt, round, truncate) Date Functions (adddate, datediff, day, month, year, hour,min, sec, now, reverse) Joining Tables – inner join, outer join (left outer, right outer, full outer) Managing Users and Privileges: Understanding Users and Privileges, Creating and using new users , GRANT OPTION privilege.	1	15

List of Practicals – 2 Credits

1	Perform the following: i. Viewing all databases ii. Creating a database iii. Viewing all Tables in a database iv. Creating Tables(With and Without Constraints)
2	Perform the following: i. Inserting Records in a Table. ii. Updating Records in a Table. iii. Deleting Records in a Table.
3	Perform the following: i. Altering a Table

	ii. Dropping/Truncating/Renaming Tables iii. Backing up / Restoring a Database
4	Perform the following: i. Simple Queries ii. Simple Queries with Aggregate functions iii. Queries with Aggregate functions (group by and having clause)
5	Subqueries With IN clause
6	Subqueries With EXISTS clause
7	Write a Queries involving Date Functions.
8	Write a Queries involving String Functions.
9	Write a Queries involving Math Functions.
10	Join Queries i. Inner Join ii. Outer Join

3. Course offered by Department of Computer Science

Course	Title	Lectures	Credits
SIUCSOE121	Basics of R programming	2 per week (60 min per lec)	2
<p>Objective: The course covers data reading and its manipulation using R, which is widely used for data analysis internationally. The course also covers different control structures and design of user-defined functions. Loading, installing and building packages are covered.</p> <p>Course Outcome:</p> <ul style="list-style-type: none"> • CO1: Develop an R script and execute it. • CO2: Install, load and deploy the required packages, and build new packages for sharing and reusability. • CO3: Extract data from different sources using API and use it for data analysis. • CO4: Visualize and summarize the data. • CO5: Design application with database connectivity for data analysis. 			
Unit I	<p>Introduction: R interpreter, Introduction to major R data structures like vectors, matrices, arrays, list and data frames, Control Structures, vectorized if and multiple selection, functions.</p> <p>Installing, loading and using packages: Read/write data from/in files, extracting data from web-sites, Clean data, Transform data by sorting, adding/removing new/existing columns, centring, scaling and normalizing the data values, converting types of values, using string in-built functions.</p>		15L
Unit II	<p>Statistical analysis of data - for summarizing and understanding data, Visualizing data using scatter plot, line plot, bar chart, histogram and box plot.</p>		15L

Course	Title	Lectures	Credits																								
SIUCSOE121	Practicals of Basics of R Programming	4 per week (45 min per lec)	2																								
1	Write a program to check whether a year (integer) entered by the user is a leap year or not?																										
2	Write an R program to find the sum of natural numbers without formula using their else statement and the while loop																										
3	<p>Write a program that prints the grades of the students according to the marks obtained. The grading of the marks should be as follows.</p> <table border="1"> <thead> <tr> <th>Marks</th> <th>Grades</th> </tr> </thead> <tbody> <tr> <td>800-1000</td> <td>A+</td> </tr> <tr> <td>700 – 800</td> <td>A</td> </tr> <tr> <td>500 – 700</td> <td>B+</td> </tr> <tr> <td>400-500</td> <td>B</td> </tr> <tr> <td>150 – 400</td> <td>C</td> </tr> <tr> <td>Less than 150</td> <td>D</td> </tr> </tbody> </table>			Marks	Grades	800-1000	A+	700 – 800	A	500 – 700	B+	400-500	B	150 – 400	C	Less than 150	D										
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400-500	B																										
150 – 400	C																										
Less than 150	D																										
4	<p>Write a set of instructions to create the following matrix using vectors and rbind() function. Rename the rows to Lang1, Lang2 & Lang3 respectively and use the function to access any one element using row names.</p> <table border="1"> <thead> <tr> <th rowspan="2">Rows</th> <th colspan="4">Columns</th> </tr> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>C#</td> <td>Java</td> <td>Cobol</td> <td>.Net</td> </tr> <tr> <td>2</td> <td>JavaScript</td> <td>NodeJs</td> <td>R</td> <td>Azure</td> </tr> <tr> <td>3</td> <td>Power BI</td> <td>ASP.Net</td> <td>Unity</td> <td>Block Chain</td> </tr> </tbody> </table>			Rows	Columns				1	2	3	4	1	C#	Java	Cobol	.Net	2	JavaScript	NodeJs	R	Azure	3	Power BI	ASP.Net	Unity	Block Chain
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5	<p>Write an R script to do the following:</p> <ol style="list-style-type: none"> simulate a sample of 100 random data points from a normal distribution with mean 100 and standard deviation 5 and store the result in a vector. visualize the vector created above using different plots. 																										
6	<p>In the library MASS is a dataset UScereal which contains information about popular breakfast cereals. Attach the data set and use different kinds of plots to investigate the following relationships:</p> <ol style="list-style-type: none"> relationship between manufacturer and shelf relationship between fat and vitamins relationship between fat and shelf relationship between carbohydrates and sugars relationship between fibre and manufacturer relationship between sodium and sugars 																										
7	<p>Using the Algae data set from package DMwR to complete the following tasks.</p> <ol style="list-style-type: none"> create a graph that you find adequate to show the distribution of the values of algae a6. show the distribution of the values of size 3. 																										

	<p>c) check visually if oPO4 follows a normal distribution.</p> <p>d) produce a graph that allows you to understand how the values of NO3 are distributed across the sizes of rivers.</p> <p>e) using a graph check if the distribution of algae a1 varies with the speed of theriver.</p> <p>f) visualize the relationship between the frequencies of algae a1 and a6. Give the appropriate graph title, x-axis and y-axis title.</p>
8	<p>Let us use the built-in dataset air quality which has Daily air quality measurements inNew York, May to September 1973. Create a histogram by using appropriate arguments for the following statements.</p> <p>a) Assigning names, using the air quality data set.</p> <p>b) Change colors of the Histogram</p> <p>c) Remove Axis and Add labels to Histogram</p> <p>d) Change Axis limits of a Histogram</p> <p>e) Create a Histogram with density and Add Density curve to the histogram</p>

4. Course offered by Department of Environment Science

COURSE CODE	TITLE	CREDITS	LECTURES
SIUESOE121	ECOTOURISM		
<p>Course Objective: To introduce the learners to the concept of ecotourism and impart environmental importance to them as a tourist.</p> <p>Learning Outcome: The course will make the students aware about the rich heritage of our country and instill a sense of responsibility towards conserving the ancient ecology of such tourist places, besides introducing them to the concerned policies followed in our country.</p>			
Unit-I: History, Nature and Scope of Ecotourism	<ul style="list-style-type: none"> • Definition and concept of Ecotourism; • History of ecotourism; • Nature of tourism; • Ecotourism and Ecotourists; • Natural resources and heritage sites; Conservation and Protected areas; • Significance and scope of ecotourism; 	1	15
Unit II: Types and Importance of Ecotourism	<ul style="list-style-type: none"> • Types of ecotourism – self- guided tours, guided tours. • Social and ecological impacts of ecotourism; Role of ethics in ecotourism; Benefits of ecotourism – educational, promotional, economical; recreational; • Ecotourism and local communities. 	1	15

Unit III: Potential and Challenges of Ecotourism	<ul style="list-style-type: none"> • Economics, marketing and management of ecotourism; • Ecotourism development; • Ecotourism programme planning; • Carrying capacity of ecotourism destinations; • Recreation Opportunity Spectrum (ROS); • Limits of Acceptable change (LAC); • Sustainable tourism development. • Case studies. 	1	15
Unit IV: Ecotourism Policy of India and Major ecotourism destinations	<ul style="list-style-type: none"> • Planning and policy frameworks; National Strategy for Ecotourism drafted in 2022 under Incredible India. • Major Ecotourism destinations in India – Jim Corbett National Park (Uttarakhand), Kerala backwaters, Thenmala (Kerala), Coorg (Karnataka), Maredumilli (Andhra Pradesh), Sunderbans (West Bengal), Khangchendzonga (Sikkim), Namdapha (Arunachal Pradesh), Tsomoriri Wetland Conservation Reserve (Ladakh), Andaman Islands, Chilika lake (Odisha), Matheran (Maharashtra), Malvan Marine Sanctuary (Maharashtra). 	1	15

5. Course offered by Department of Information Technology

COURSE CODE	TITLE	CREDITS 2(T) + 2(P)	LECTURES
SIUITOE121	Data Analysis in MS Excel		
<p>Course Objective: Help students to organize data in an easy-to-navigate way, turn piles of data into helpful graphics and charts and analyze data and make forecasting predictions.</p> <p>Learning Outcome: Upon completion of this course, student will be able to:</p> <p>CO1: Remember and apply the basics of excel such as formatting cells, sorting and filtering of the given large data set.</p> <p>CO2: Remember to design the various charts in excel.</p> <p>CO3: Apply powerful features like pivot table and chart to large data set in excel.</p>			
Unit-I:	What is Excel? Cells, Rows, and Columns, Navigation, Formatting, Separating Text within a Cell, Sorting, Filters, Functions and Formulas Excel New Features: Chart Recommendations, Format Charts, Chart Design, Richer Data Labels, Leader Lines	1	15

	Fundamental Data Analysis: Instant Data Analysis, Sorting Data by Color, Slicers, Flash Fill		
Unit II:	Powerful Data Analysis: PivotTable and Pivot Chart, Data Model, PowerPivot, External Data Connection, Pivot Table Tools, Power View, Visualizations, Pie Charts, Format Reports, Handling Integers, Templates, Manage Passwords.	1	15

List of Practical: 2 credits

Any 10 practical with respect to the syllabus topics.

6. Course offered by Department of Mass Media

Course Code	Title	Credits	Lectures
SIUMMOE121	UNDERSTANDING CINEMA	4	
Course Outcomes	On completion of this course, students will be able to: <ul style="list-style-type: none"> describe and relate with history of cinema from still pictures to moving images. discuss and illustrate aspects of film appreciation. examine major film movements and its impact. compare and evaluate mainstream Indian cinema and parallel Indian cinema discuss and demonstrate film production to film exhibition under stages of film making. describe film institute, bodies, associations and relevance of film awards in India and abroad. 		
Unit I	<ul style="list-style-type: none"> Introduction to Cinema as a Medium, Language of Cinema, Cinema Narratives, Evolution of Cinema covering Hollywood as well as Indian Cinema from the early beginnings to its status today. Popular Hindi commercial films (Bollywood): past to present, economic contribution of cinema, convergence of art and commercial, genre in present (romcom, thriller, biographic, action, musical etc.) The contemporary era, from celluloid to digital (1990-1999), the digital explosion (2000 onwards), media convergence and film viewing culture. 	1	15
Unit II	<ul style="list-style-type: none"> Introduction to the genres, understanding diverse film genres, with a special mention to Italian neorealism, French new wave. Introduction and basic discussion to cover a broad range of films: Documentaries, Commercial Ads, Corporate Films, Short Films, Newsreels, Public Service Ads and others. 	1	15

Unit III	<ul style="list-style-type: none"> • Introduction to Film Institute, Film Bodies and Trade Associations such as FTII, NFAI, Films Division, the DFF, IFFI, CBFC, IFTDA, SGI, WICA, etc. • Film Festivals: What is Film Festival? Major Film Festivals in India and Abroad • Film Awards: Nature and Types of Film Awards. Major Film Awards in India and Abroad 	1	15
Unit IV	<ul style="list-style-type: none"> • Basic Introduction to the TECHNOLOGY used in Cinema; Introduction to few important TECHNIQUES employed by different film makers; Introduction to the BUSINESS with prevailing practices in the production and marketing of films. The contribution and the role of Digital technologies in Modern Filmmaking process. • Filmmaking <ul style="list-style-type: none"> ○ Film Production to Film Exhibition ○ Aspects of Production Systems: Financial, Administrative and Creative. ○ Stages of Filmmaking -1: Pre-Production ○ Stages of Filmmaking -2: Actual Production ○ Stages of Filmmaking -2: Post-Production ○ Film and Censorship. ○ ROI Systems in Film Industry (Distribution, Promotion, Marketing, Branding, Internet) • Trending in 2023; Streaming videos, social media and gaming, VR, AR Future of Entertainment (personalized, immersive) 	1	15

8. Course offered by Department of Management Studies

Course Code	Title	Credits	Lectures
SIUMSOE121	FINANCIAL LITERACY AND INVESTING	4	
Course Outcomes	<ul style="list-style-type: none"> • To make students aware about the practical aspects of money and money management • To highlight the importance of investments in achieving financial independence • To help students in recognizing the importance of financial prudence and impact of purchase decision on the personal finances • To understand how passive income can become secondary source of income 		
Unit I	Introduction to Budgeting Concept of Income, Expenses and Savings- Types of Income and expenses, Different sources of Income- Difference between needs and wants- Concept of budgeting, Importance of budgeting, process of budgeting (steps in budgeting), The Budgeting Rule	1	15
Unit II	Introduction to Investment and Different Investment Avenues Concept of Investment, difference between Investment and Savings- Investment Process- Criteria for Investment- Type of Investors- Factors Influencing selection of Investment-	1	15

	Different Investment Avenues- Short Term and Long Investment- Alternate (Modern) Investment Avenues like Cryptocurrencies, Non-Fungible Tokens and Digital Assets		
Unit III	Purchase Decision, Opportunity cost and Concept of Gratification Meaning of Purchase Decision, Types of Purchase Decision, Process of Decision Making, Concepts of Opportunity Cost and Scarcity, Concept of Instant Gratification, Delayed Gratification and Financial Minimalism	1	15
Unit IV	Introduction to the Assets and Liabilities and Financial Planning Meaning of Asset and Liability, Concept of Real asset and liability, Types of Asset and Liabilities- Concept of Financial Planning, Financial Goals- Steps in Financial Planning- Retirement Planning.	1	15

