THE MAHATMA GANDHI UNIVERSITY

UNDERGRADUATE PROGRAMMES (HONOURS)

SYLLABUS

MGU-UGP (Honours)

(2024 Admission Onwards)

Faculty: Technology and Applied Sciences

Expert Committee: Computer Application

Subject: Computer Application

Mahatma Gandhi University
Priyadarshini Hills
Kottayam – 686560, Kerala, India

Syllabus Index

Name of the Minor: Computer Application

Semester: 1

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours / week	Hour Distribution /week			
					L	T	P	O
MG1DSCCMA100	Documentation Tools and Techniques	DSC B	4	5	3	0	2	0
MG1DSCCMA101	Introduction to Web Designing	DSC B	4	5	3	0	2	0

L — Lecture, T — Tutorial, P — Practical/Practicum, O — Others

Semester: 2

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG2DSCCMA100	AI-Powered Presentation Tools and Techniques	DSC B	4	5	3	0	2	0
MG2DSCCMA101	Responsive Web Designing	DSC B	4	5	3	0	2	0

Semester: 3

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG3DSCCMA200	AI Techniques for Data Analysis	DSC B	4	5	3	0	2	0
MG3DSCCMA201	Web Development using PHP							
MG3DSCCMA202	E-Tourism (For Bachelor of Travel and Tourism Management (BTTM))	DSC B	4	5	3	0	2	0

Semester: 4

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours/ week	Hour Distribution /week			
					L	T	P	O
MG4DSCCMA200	Data Analytics using R	DSC B / DSC C	4	5	3	0	2	0
MG4DSCCMA201	Digital Tools for Business and Research							
MG4DSCCMA202	E-Tourism (For Bachelor of Travel and Tourism Management (BTTM))	DSC C	4	5	3	0	2	0

Semester: 5

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours / week	Hour Distribution /week			
					L	T	P	O
MG5DSCCMA300	Digital Marketing	DSC B	4	4	4	0	0	0

L – Lecture, T – Tutorial, P – Practical/Practicum , O – Others

Semester: 6

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours / week	Hour Distribution /week			
					L	T	P	O
MG6DSCCMA300	Data Visualization and Business Analytics	DSC B	4	5	3	0	2	0

L – Lecture, T – Tutorial, P – Practical/Practicum , O – Others

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Programme						
Course Name	**Documentation Tools and Techniques**					
Type of Course	**DSC B**					
Course Code	**MG1DSCCMA100**					
Course Level	**100**					
Course Summary	This course equips participants with diverse skills in document creation and formatting using Libre Office Writer, Scribus, and Google Docs covering essential features such as page layout, graphics integration, styles, templates, and advanced techniques for effective document production across different platforms.					
Semester	1	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate the features of LibreOffice Writer for document formatting, mail merge, exporting, and printing.	U	1
2	Describe the features of Scribus as desktop publishing software.	U	1
3	Illustrate the features of Google Docs for web-based word processing.	U	1
4	Utilize LibreOffice Writer, Scribus, and Google Docs to create efficient documents suitable for various industries.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	Libre Office Writer			
	1.1	Introduction to Libre Office, Features and applications for Libre Office, Introduction to Office Writer, Basic Document Formatting.	5	1
	1.2	Page Layout and Sections, Lists and Bullets, Tables and Columns.	5	1
	1.3	Graphics and Objects, Styles and Templates, Mail Merge, Exporting and Printing.	5	1
2	Scribus			
	2.1	Basic concepts, Scribus workspace, Opening, Creating and Saving documents, Navigating in a document, Working with Frames.	5	2
	2.2	Working with Text, Working with Styles, The Story Editor, Working with lmages, Working with Shapes and Polygons, Straight lines and Arrows, Bézier Curves and Freehand Lines, Colors and Gradients.	5	2
	2.3	Master Pages, Page Numbering, Search and Replace, Typography- Fonts and Font Technology, Font Preview and Font Management, Drop Caps.	5	2
3	Google Docs			
	3.1	Google Docs: A web based word processing App- Features of Google Docs. Building Documents- Creating a new Document, Entering Text, Dictate Text, Text Formatting, Paragraph Formatting, Lists, Hyper links, Equations, Page and Section breaks, Headers and Footers, Footnotes.	6	3
	3.2	Adding Images and Graphics- Adding Images, Resize Images, Rotate Image, Cropping Images, Wrap text around Images, Drawings. Tables and Charts- Inserting Tables, Insert/ Delete Rows and	6	3

		Columns, Formatting Tables, Adding Charts, Customize Charts.		
	3.3	Sharing and Collaborating- Sharing a Document, Eding Shared Documents, Sharing a Link, Managing Documents, Using Google Drive.	3	3
4	Lab Practice		30	
	4.1	Libre Office Writer Format a paragraph with a specific font, size, and color, Apply different text styles (e.g., Heading 1, Heading 2) to sections of your document, Create a bulleted list with at least three items, Insert a table with rows and columns, Merge and split cells within the table, Insert an image into your document, Apply an existing template to your document, Set up a mail merge document with a sample data source, Export your document in PDF format.	10	4
	4.2	Scribus Create a new document for a brochure with specific page dimensions, margins, and orientation, Design a magazine page with various text boxes. Apply different font styles, sizes, and colors to create visually appealing text elements, Explore the options for resizing and cropping images, Design a newsletter with a multi-column layout, create a product catalog with a table listing product details, create a poster with a color scheme that complements the content. Experiment with gradient effects and spot colors.	10	4
	4.3	Google Docs Create a document in Google Docs using text typing or voice typing. Format the text. Insert a bulleted list and a numbered list to organize key points. Add a hyperlink to a relevant website, Include an image from Google Drive, Google Photos, Camera, or PC. Resize the image, rotate it, and wrap text around it. Create a table and format it. Insert a chart from Google Sheets, customize its appearance. Add a header with the document title, a footer with page numbers, and a footnote for additional information. Finally, share the document with a peer, allowing them to comment	10	

		and suggest edits. Organize the document in Google Drive, managing sharing permissions.		
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. MCQ 3. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: MCQ (Answer all) - (20*1=20 Marks) Part B: Short Answer Questions (10 out of 12 Questions) (10*3=30 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: One Question (Covers topics from Libre Office Writer, Scribus, or Google Docs) 1. Procedure- 10 Marks 2. Output- 10 Marks 3. Viva- 5 Marks 4. Record- 10 Marks

REFERENCES

1. "LibreOffice Writer – The Ultimate Guide", by Jean Weber.
2. Balasubramanian Thiagarajan, “Scribus An Introduction”, Otolaryngology online, 2020.
3. Kevin Wilson, “Understanding Google Docs: The Step-by-step Guide to Understanding the Fundamentals of Google Docs”, Elluminet Press Ltd, 2021.

SUGGESTED READINGS

1. LibreOffice 6.4 Getting Started Guide", The LibreOffice Documentation Team.
2. Steven Holzner & Nancy Holzner, “Google Docs 4 Everyone”, Que Publisher, 2009.

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Programme	
Course Name	**Introduction to Web Designing**
Type of Course	**DSC B**
Course Code	**MG1DSCCMA101**
Course Level	**100**
Course Summary	This course equips participants with the skills to design web pages using web technologies such as HTML5 and Cascading Style Sheets.

Semester	1	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Describe the fundamentals of World Wide Web and the basic HTML tags.	U	1
2	Illustrate Form tag, its attributes and HTML 5 features.	U	1
3	Illustrate the features of Cascading Style Sheets and its application in web design.	U	1
4	Design webpages using HTML and Cascading Style Sheets.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to Web Designing - World Wide Web (WWW)- Evolution and History of WWW, Web Pages and Contents, Web Servers, Web Browsers, URLs, Scripting Languages.	5	1
	1.2	HTML (Hypertext Markup Language)- Introduction - History of HTML, tags and attributes, HTML tag vs element, HTML attributes, comments. General Structure of HTML document.	5	1
	1.3	Basic Formatting Tags, Heading tags, Paragraph Tags, Grouping Using Div Span, Lists, Images, Hyperlink, Tables, iFrame, Font, Colors, Marquees.	5	1
2	2.1	Form-text input controls, checkbox control, radio button control, select box control, file upload box control, button controls, hidden form controls, Headers- title, base, link, style, script, meta.	8	2
	2.2	Introduction to HTML5: header, footer, selection, article, aside, navi, progress, audio, video, embed, source, various input type attributes.	7	2
3	3.1	Cascading Stylesheets (CSS)-Introduction, Benefits of CSS, CSS Syntax	5	3
	3.2	Types of Style Sheets - External style sheet, Internal style sheet, Inline style sheet	5	3
	3.3	Selectors, CSS ID and Class, CSS Styling (Background, Text Format, Controlling Fonts), CSS box model.	5	3

4	Lab Practice			
	4.1	• Create a basic HTML page with the necessary elements. • Create a web page with ordered list and unordered list with at least three list item each • Create webpage with list of websites and create clickable hyperlink to each website • Creating a simple contact form with fields for name, email, subject, and message • Create a set of radio buttons and checkboxes with appropriate labels • Create an HTML document and apply inline CSS styles to different elements (e.g., text color, background color, font size) • Create an external CSS file and link it to an HTML document to apply these styles into the HTML document	30	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva

	B. Semester End Examination **ESE for Theory: 50 Marks** **Written Test (50 Marks) (1.5 Hrs)** Part A: Very Short Answer Questions (Answer all) – (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) - (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) – (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** 1. Practical test (20 marks) • Design a website using HTML and CSS 2. Viva- 5 Marks 3. Record- 10 Marks

REFERENCES

1. Thomas A Powell, "HTML & CSS- The Complete Reference", 5th Ed., McGraw-Hill Publishers.

SUGGESTED READINGS

1. John Dean, "Web Programming With HTML5, CSS, And Javascript", Jones and Bartlett Publishers, Inc, 2018
2. Don Duckett, "HTML & CSS – Design and Build Websites", Wiley, 2011

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Programme						
Course Name	**AI-Powered Presentation Tools and Techniques**					
Type of Course	**DSC B**					
Course Code	**MG2DSCCMA100**					
Course Level	**100**					
Course Summary	This course equips participants to proficiently create, design, and deliver compelling presentations through the utilization of LibreOffice Impress and Google Slides, incorporating AI.					
Semester	2	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate the open-source LibreOffice Impress to create and design presentations.	U	1
2	Summarize the features of Cloud-based presentation software, Google Slides and its purpose in collaborative presentations.	U	1
3	Illustrate the integration of AI to presentation tools for and creating professional presentations.	U	1
4	Create, design, and deliver effective presentations using LibreOffice Impress and Google Slides with the integration of AI.	A	2

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	Libre Impress			
	1.1	Overview of the software, its purpose, and benefits. Basic Interface: Understanding the main interface, menus, and toolbars. Creating Presentations: Creating new presentations, saving, and opening existing ones.	5	1
	1.2	Slides and Layouts: Working with different slide layouts, Adding and formatting text, images, and other media. Design and Themes: Applying themes and customizing the design of slides, Modifying background colors and styles.	5	1
	1.3	Animations and Transitions: Adding animations to text and objects, applying slide transitions to enhance the presentation. Charts and Graphs: Creating and editing charts and graphs within Impress.	5	1
2	Google Slides			
	2.1	Overview of the software, its purpose, and benefits. Basic Interface: Understanding the main interface, menus, and toolbars, Managing slides and presentation settings. Creating Presentations, Saving and organizing presentations in Google Drive, Importing and converting presentations from other formats.	5	2
	2.2	Slides and Layouts, Adding and formatting text, images, and shapes, Arranging and organizing slides. Design and Themes: Applying themes, Customizing slide backgrounds, colors, and fonts. Animations and Transitions, Slide transitions. Charts and Graphs: Creating and editing charts and graphs within Google Slides, Importing data for dynamic charts.	5	2
	2.3	Advanced Features: Utilizing advanced formatting options, Incorporating multimedia elements (audio, video), Customizing speaker notes, Using	5	2

		add-ons for extended functionality- Plus AI, MagicSlides, and SlidesAI.io.		
3	AI Tools for Presentation			
	3.1	AI-Enhanced Presentation -Integrating AI in to the presentation- Intelligent Design and Layout, AI-driven Content Creation, Designing Visuals with AI, Enhancing Delivery with AI.	6	3
	3.2	A Step-by-Step Guide to Create a Presentation with AI: Choose AI presentation tool, Prepare the content, Feed the content to the tool, Generate slides, Refine slides, and Present.	6	3
	3.3	AI presentation tools-AI powered Slide Design Assistants: Canva's Magic Design, Google Slides's Plus AI, MagicSlides, and SlidesAI.io- Simplified AI, Gamma AI, Tome.	3	3
4	Lab Practice			
	4.1	Libre Impress Create a new presentation with a title slide and three content slides. Save the presentation in different formats, Choose a specific slide layout and add formatted text, an image, and a bulleted list to demonstrate the flexibility of slide layouts, Apply a predefined theme to your presentation and customize it by changing the background color and font style, Apply an entrance animation to a specific text box on a slide and set a slide transition effect between two slides, Create a bar chart representing fictional data and customize its appearance (e.g., color, labels), Apply a special effect (e.g., shadow or reflection) to an object on a slide.	15	4
	4.2	Google Slides Add a new blank slide and insert an image into the presentation, Rearrange the order of slides in your presentation using the slide sorter view, Create a new presentation, save it to Google Drive, and organize it into a specific folder, Choose a unique slide layout and add formatted text, an image, and a shape to demonstrate flexibility, Apply a predefined theme to your presentation and customize it by changing the background color and font style, Apply an animation to a specific text box and set a slide transition effect between two slides,	15	4

		Create a bar chart representing data and customize its appearance, Embed an audio or video file into a slide, Explore and install a relevant add-on to extend the functionality of Google Slides. Create a presentation using AI add-ons in Google Slides		
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. MCQ 3. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	B. Semester End Examination **ESE for Theory: 50 Marks** **Written Test (50 Marks) (1.5 Hrs)** Part A: MCQ (Answer all) - (20*1=20 Marks) Part B: Short Answer Questions (10 out of 12 Questions) (10*3=30 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: One Question (Covers topics from Libre Office Impress or Google Slides) 1. Procedure- 10 Marks 2. Output- 10 Marks 3. Viva- 5 Marks 4. Record- 10 Marks

REFERENCES

1. "LibreOffice 6.4 Getting Started Guide", The LibreOffice Documentation Team.

2. "Google Slides: The Comprehensive Guide", Scott La Counte.

SUGGESTED READINGS

1. "LibreOffice 6.4 - The Complete Guide (Mastery Series)", Nuno Tavares
2. "Google Workspace for Beginners", Heather Buchana

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Programme						
Course Name	**Responsive Web Designing**					
Type of Course	**DSC B**					
Course Code	**MG2DSCCMA101**					
Course Level	**100**					
Course Summary	This course provides a comprehensive introduction to JavaScript and jQuery for web development, covering essential programming concepts, DOM manipulation, form handling, and responsive design using Bootstrap.					
Semester	2	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any	Participants have a foundational knowledge of HTML.					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Describe the fundamentals of JavaScript programming.	U	1
2	Demonstrate jQuery for efficient DOM manipulation, form handling and validation.	U	1
3	Illustrate Bootstrap and its components to create responsive web designs.	U	1
4	Design and implement responsive web layouts and form handling using JavaScript, jQuery, and Bootstrap.	A	2
****Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)***			

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	JavaScript			
	1.1	Introduction to JavaScript - Overview of JavaScript: history, features, and its role in web development; Setting up a development environment: text editors, browsers, developer tools; JavaScript syntax: variables, data types, operators, and expressions.	8	1
	1.2	Control Flow and Functions - Conditional statements: if...else, switch; Looping structures: for, while, do...while; Functions: defining functions, function expressions; Scope and closures: global scope, local scope, closure concept.	7	1
2	jQuery			
	2.1	Introduction to jQuery - Overview of jQuery: history, features, advantages; Setting up jQuery: installation methods; Understanding the jQuery syntax; Selecting elements with jQuery: CSS selectors, basic filters.	5	2
	2.2	DOM Manipulation with jQuery - Traversing the DOM with jQuery; Modifying HTML content with jQuery; Adding, removing, and modifying DOM elements; Handling events with jQuery: click, hover, submit, etc.	5	2
	2.3	Working with Forms and Form Validation - Handling form submissions with jQuery; Validating forms with jQuery; Using jQuery plugins for form validation; Implementing custom form validation with jQuery.	5	2
3	Bootstrap			
	3.1	Introduction to Bootstrap - Overview of Bootstrap: history, features, advantages; Setting up Bootstrap: installation methods; Understanding the Bootstrap grid system; Using	6	3

		Bootstrap components: navigation bars, buttons, forms.		
	3.2	Responsive Design with Bootstrap - Introduction to responsive web design; Using Bootstrap's responsive utilities; Creating responsive layouts with Bootstrap grid system; Designing for different screen sizes: mobile, tablet, desktop.	6	3
	3.3	Bootstrap components - Working with Bootstrap typography; Using Bootstrap's CSS classes for styling text and headings; Creating and customizing buttons and button groups; Building responsive navigation bars and dropdowns.	3	3
4	Lab Practice			
	4.1	• Write a program that checks whether a given number is even or odd and displays a message accordingly. • Write a JavaScript program using function • Create an HTML form with input fields for username and password. Write JavaScript code to validate the form and display an error message if the fields are empty. • Write a program that prompts the user to enter their name and displays a personalized greeting using an alert dialog box. • Create a webpage with various HTML elements (e.g., buttons, paragraphs, divs) and write jQuery code to select and manipulate those elements. • Create a form with input fields for name and email address. Use jQuery to intercept the form submission event, validate the inputs, and display a success message if validation passes. • Create a simple grid layout with rows and columns using Bootstrap's grid system. • Create a simple form with input fields (e.g., name, email, message) using Bootstrap's form components.	30	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	B. Semester End Examination **ESE for Theory: 50 Marks** **Written Test (50 Marks) (1.5 Hrs)** Part A: Very Short Answer Questions (Answer all) - (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) - (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** 1. Practical test (20 marks) • Webpage Designing (JavaScript, jQuery and Bootstrap) 2. Viva- 5 Marks 3. Record- 10 Marks

REFERENCES

1. Jon Duckett, "Web Design with HTML, CSS, JavaScript and jQuery", 1st Ed., Wiley, 2014.
2. Jake Spurlock, "Bootstrap: Responsive Web Development", O'Reilly Media, 2013.

SUGGESTED READINGS

1. Julie Meloni & Jennifer Kyrnin, "HTML, CSS, and JavaScript All in One", 3rd ed., Pearson, 2019.
2. Jennifer Niederst Robbins, "Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics", 5th ed., Shroff/O'Reilly, 2018.
3. Matt Lambert, "Learning Bootstrap 4", 2nd ed., Packt Publishing, 2016.

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Programme						
Course Name	**AI Techniques for Data Analysis**					
Type of Course	DSC B					
Course Code	**MG3DSCCMA200**					
Course Level	**200**					
Course Summary	This course provides a comprehensive introduction to AI techniques for data analysis, covering fundamental Python programming, data manipulation, visualization, and practical applications in real-world data analytics projects.					
Semester	3	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any	Nil					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Summarize the fundamental concepts of Artificial Intelligence, data analysis, various data analytic tools and AI techniques in data analytics.	U	1
2	Demonstrate Python programming fundamentals, data structures, Numpy and Pandas libraries.	U	1
3	Illustrate Data Analysis Lifecycle using Python libraries.	U	1
4	Apply Python libraries to perform various Data Analytics tasks.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Introduction**			
	1.1	Definition and scope of Artificial Intelligence (AI), Historical background and milestones in AI development, Applications of AI in different fields, Ethical considerations and societal impact of AI.	4	1
	1.2	Introduction to Data Analysis: Sources and nature of data, Classification of data (Structured, Semi-structured, Unstructured), Characteristics of data, Introduction to Big Data platform.	3	1
	1.3	Data Analysis vs Data Analytics, Need of Data Analytics, Data Analytic Process and Tools, Modern Data Analytic Tools, Common AI techniques used in Data Analytics, Applications of Data Analytics, Future trends in AI analytics.	5	1
2	**Python Fundamentals**			
	2.1	Python- A Data Analysis Tool- Basic Python syntax: variables, data types, operators.	3	2
	2.2	Control structures- Selective statements – if, if-else, nested if, if –elif ladder statements, Iterative statements - while, for.	4	2
	2.3	Python Packages- Introduction to Numpy- Working with arrays, Introduction to Pandas- Data Manipulation and analysis.	5	2
	2.4	Introduction to Python Data Structures- List, Tuple, Dictionary, Sets and Data Frame.	4	2

3	**Python for Data Analysis**			
	3.1	Data Analysis Life Cycle- Data Collection, Data Preparation, Data Exploration, Data Visualization and Interpretation.	3	3
	3.2	Loading and Handling Data using Python libraries- Reading CSV files, Handling missing data and outliers.	4	3
	3.3	Data manipulation-Indexing, Selection, Filtering, Reshaping-Summarizing and Computing Descriptive Statistics-Data Transformation.	6	3
	3.4	Data Visualization using matplotlib - bar plot, line plot, histogram, pie chart, and scatter plot.	4	3
4	**Lab Practice**			
	4.1	Demonstration of the usage of variables, data types, operators, branching and looping statements and Data Structures.	6	4
	4.2	Implementation of Ndarray Basic Operations - Indexing, Slicing and Iterating, Shape Manipulation, Array Manipulation.	6	4
	4.3	Implementation of DataFrames, Data manipulation-Indexing, Selection, Filtering, Reshaping, Descriptive Statistics – count(), sum(), mean(), median(), mode(), std(), min(), max() and cumsum().	6	4
	4.4	Reading from csv files, Data cleaning, Inserting columns into DataFrames, Deleting columns from DataFrame, Concatenating DataFrame, Writing back to csv files.	6	4
	4.5	Data Visualization using matplotlib - bar plot, line plot, histogram, pie chart, and scatter plot.	6	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: Very Short Answer Questions (Answer all) - (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) - (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) - (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: Two Questions a. Question1: Covers topics from Python Control structures and Data structures b. Question2: Covers topics from loading and handling datasets, Data Manipulation, Descriptive Statistics and Visualization. 1. Code - 10 Marks 2. Output - 10 Marks 3. Viva - 5 Marks 4. Record - 10 Marks

REFERENCES

1. Stuart Russell and Peter Norvig, "Artificial Intelligence: A Modern Approach", 3rd Edition, Pearson Education, 2010.

2. Wes McKinney, "Python for Data Analysis" 1st Edition, O'Reilly, 2013.

SUGGESTED READINGS

1. Fabio Nelli, "Python Data Analytics Data Analysis and Science Using Pandas, Matplotlib, and the Python Programming Language", 1st Edition, 2015, Apress.

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Programme						
Course Name	**Web Development using PHP**					
Type of Course	DSC B					
Course Code	**MG3DSCCMA201**					
Course Level	**200**					
Course Summary	This course covers server-side scripting with PHP, including cookies, sessions, forms, error handling, MySQL database management, and dynamic web page development.					
Semester	3	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any	Awareness of HTML Tags.					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate the fundamental building blocks of PHP to build PHP Scripts	U	1
2	Illustrate how to manage PHP cookies, sessions and forms as well as implementation of error handling and exceptions.	U	1
3	Describe the MySQL database concepts and management of database connections with webpages.	U	1
4	Design and develop dynamic web pages with database integration.	A	2

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to server-side scripting, Web Server Installation and configuration Files, Introduction to PHP, How PHP Script Work, Comments, Variables, Data types, Operators- Arithmetic, Logical, Comparison, Assignment, Conditional.	4	1
	1.2	Control Structures - If Statement, If.....Else Statement, If...If Else Statement, Nested If Statement, Switch Statement. Looping Structures - For Loop, While Loop, Do...While Loop, For each Loop.	4	1
	1.3	Arrays - Associative Array, Numeric Array, Multi-Dimensional Array. Functions - What is a function?, Syntax, User Defined Function, System Defined Function, Parameterized Function, Date & Time Function. String Functions - chr(), strlen(), strpos(), strcmp().	4	1
	1.4	File Inclusion - Include(), Require(). Working with File - Opening File, Reading File, Writing File, Closing File, Appending File, Uploading File.	3	1
2	2.1	PHP cookies - Creating Cookies, Set Cookies, Destroying Cookies.	4	2
	2.2	PHP session - Creating Session, Set Session, Destroying Session.	4	2
	2.3	Working with form, super global variables, different ways to carry form data (GET, POST, REQUEST), isset(), isempty(), form data validation.	4	2
	2.4	Error Handling & Exception- Introduction to Error, Try, Catch.	3	2
3	3.1	Introduction to MySQL, What is Database, Understanding Tables, Record & Fields, SQL Language.	4	3

	3.2	Working with MySQL Admin- Creating Database & Tables, Dropping Database & Tables, Adding Fields, Selecting Table, Alerting Fields Properties.	5	3
	3.3	Database Connections, Managing Database Connections, Performing Queries – create database, create table, insert table values, insert tables values from a form, Closing Connection.	6	3
4	4.1	Lab Practice • Solve problems using PHP • Using include() function to create web pages • Using GET and POST methods to collect data from a form and display it into the web page. • Insert values into the table from a form using database connectivity.	30	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: Very Short Answer Questions (Answer all) - (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) - (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)**

	1. Practical test (20 marks) • Webpage Designing using PHP and MySQL 2. Viva- 5 Marks 3. Record- 10 Marks

REFERENCES

1. Robin Nixon,"Learning PHP, MySQL & JavaScript", O'Reilly Media, Inc. 2021

SUGGESTED READINGS

1. Jennifer Niederst Robbins, "Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics", Shroff/O'Reilly, 2018.
2. Alan Forbes, "The Joy of PHP: A Beginner's Guide to Programming", 2012.

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Programme						
Course Name	**E-Tourism**					
Type of Course	DSC B					
Course Code	**MG3DSCCMA202**					
Course Level	**200**					
Course Summary	The objective of this course is to help the students to understand the use of Information technology in the tourism industry.					
Semester	3	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate a comprehensive understanding of E-tourism.	U	1
2	Identify and analyze E-Tourism components and functions.	An	1
3	Illustrate different Payment Systems in E-Tourism.	U	1
4	Analyze the trends in E-Tourism and apply information technology in E-Tourism by integrating social media platforms and Artificial Intelligence.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to E-tourism: Historical Development - Strategic, Tactical and Operational use of IT in Tourism.	4	1
	1.2	Global Distribution System, CRS- concept, uses of CRS in Airlines, Railways, Hotel booking, Importance of E-ticketing.	4	1
	1.3	Case Study of Amadeus - Galileo, World Span, SABRE, Abacus.	7	1
2	2.1	Components of E-Tourism: E-Airlines, E-Hospitality, E-Tour Operators, E-Travel Agencies and E-Destination.	6	2
	2.2	Functions of E-Tourism	3	2
	2.3	Business models - Business to Business (B2B) - Business to Consumer (B2C) - Consumer to Business (C2B) - Consumer to consumer (C2C) - Business to Employees (B2E) & Business to Government (B2G).	6	2
3	3.1	Payment Systems in E-Tourism: Payment Gateway - Billing and Settlement Plan (BSP)	5	3
	3.2	Security Issues and Certification	4	3
	3.3	Digital Payment Methods: Usage of digital wallets in E-Tourism, Quick pay options such as Tez, Samsung Pay, and BHIM, Virtual banks like Paytm and Airtel Money, Case Study	6	3
4	4.1	Future of E-tourism - Travel Blogs - Importance of travel blogs in the tourism industry –Case Study.	5	4
	4.2	E-marketing and promotion of tourism products- Utilization of social media platforms: Facebook, X(Twitter), YouTube, WhatsApp.	5	4

	4.3	Integration of Artificial Intelligence (AI) in E-tourism-Virtual Reality (VR) applications in the travel sector.	5	4
	4.4	Project works integrating Information Technology in E-Tourism.	15	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecturing, Practicum -Case Study and project
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Case study / Project review1 2. Case study / Project review2
	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test(50 Marks)** Part A: Very Short Answer Questions (Answer all) – (10*1=10 Marks) Part B: Short Answer Questions(4 out of 6 Questions) - (4*5=20 Marks) Part C: Essay Questions(2 out of 3 Questions) – (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** 1. Presentation of Case study/ Project (20 marks) 2. Report- 10 Marks 3. Viva- 5 Marks

REFERENCES

1. **Sheldon, P.** (2002). Tourism Information Technology. CABI.
2. **Inkpen, G.** (2000). Information Technology for Travel and Tourism. Addison Wesley.

SUGGESTED READINGS

1. **Buhalis, D.** (2004). E Tourism: Information Technology for Strategic Tourism Management. Prentice Hall.
2. **Poon, A.** (1998). Tourism, Technology, and Competitive Strategies. CABI.
3. **Rayport, J.F., & Jaworski, B.J.** (2003). Introduction to E-Commerce. McGraw Hill.
4. **Eisenmann, T.R.** (2002). Internet Business Models – Text and Cases. McGraw Hill.
5. **Malvino, A.P.** (1995). Electronic Principles. McGraw-Hill.
6. **Gretzel, U., Sigala, M., & Xiang, Z. (Eds.)** (2023). *Handbook of e-Tourism*. Springer.
7. **Law, R., Fong, D.K.C., & Buhalis, D.** (2021). *Progress in Information and Communication Technology in Tourism*. Springer.

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Programme	
Course Name	**Data Analytics using R**
Type of Course	DSC B/ DSC C
Course Code	**MG4DSCCMA200**
Course Level	**200**
Course Summary	This course provides comprehensive training in R programming, focusing on data structures, data frames, descriptive statistics, and data visualization to effectively analyze and interpret datasets.

Semester	4	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate fundamental programming concepts in R.	U	1
2	Describe R Data Frames and its functions to create, manipulate, and explore data in the datasets.	U	1
3	Illustrate descriptive statistics and analyse various plots in R to interpret and visualize data in the datasets.	An	1
4	Apply various R programming constructs to comprehensively analyze, interpret, and present data from datasets.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	**Introduction to R:** What is R? – Why R? – Advantages of R over Other Programming Languages - R Studio: R command Prompt, R script file, comments – Handling Packages in R: Installing a R Package, Few commands to get started.	4	1
	1.2	**R Data Types:** Vectors, Lists, Matrices, Arrays, Factors, Data Frame – **R - Variables:** Variable assignment, Data types of Variable, Finding Variable ls(), Deleting Variables - **R Operators:** Arithmetic Operators, Relational Operators, Logical Operator, Assignment Operators, Miscellaneous Operators	8	1
	1.3	**R Decision Making:** if statement, if – else statement, if – else if statement, switch statement – **R Loops:** repeat loop, while loop, for loop - Loop control statement: break statement, next statement.	6	1
2	2.1	**Exploring Data in R: Data Frames** –Create Data Frame, Data Frame Access, Understanding Data in Data Frames: dim(), nrow(), ncol(), str(), Summary(), names(), head(), tail(), edit() functions - Extract Data from Data Frame.	5	2
	2.2	**Expand Data Frame:** Add Column, Add Row - Joining columns and rows in a Data frame rbind() and cbind() – Merging Data frames merge() – Melting and Casting data melt(), cast().	4	2
	2.3	**Loading and handling Data in R:** Getting and Setting the Working Directory – getwd(), setwd(), dir() - **R-CSV Files -** Input as a CSV file, Reading a CSV File, Analyzing the CSV File: summary(), min(), max(), range(), mean(), median(), apply() - Writing into a CSV File – **R -Excel File** – Reading the Excel file.	6	2
3	3.1	**Descriptive Statistics: Data Range, Frequencies, Mode, Mean and Median:** Mean Applying Trim Option, Applying NA Option, Median - Mode **- Standard Deviation – Correlation.**	6	3

	3.2	**Data Visualization in R: R –Pie Charts**: Pie Chart title and Colors – Slice Percentages and Chart Legend, 3D Pie Chart – **R Histograms** – Density Plot - **R – Bar Charts**: Bar Chart Labels, Title and Colors. Scatter Plots - Box Plots - Scatter Plots and Boxand-Whisker Plots Together -Customize plot axes, labels, add legends, and add colours.	6	3
4	4.1	Lab Practice: • Download and install R-Programming environment and install basic packages using install.packages() command in R. • R scripts including the basics of R-Programming (Data types, Variables, Operators etc,.) • R scripts implementing R decision controls and loops • R scripts implementing different data structures (Vectors, Lists, DataFrames) . • R scripts implementing different String Manipulation functions. • R scripts for reading a csv file and analyze the data in the file. • Create pie chart, bar chart, histogram, scatter plot and box plot using R. • Create a data set and do statistical analysis on the data using R.	30	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **B. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva
	C. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: Very Short Answer Questions (Answer all) - (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) - (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) - (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: Two Questions c. Question1: Covers topics from R Control structures, Data structures, and Data frames d. Question2: Covers topics from loading and handling datasets, Descriptive statistics and Visualisation. 1. Code - 10 Marks 2. Output - 10 Marks 3. Viva - 5 Marks 4. Record - 10 Marks

REFERENCES

1. Seema Acharya, “Data Analytics using R”, McGrawHill Education (India), 2018.

SUGGESTED READINGS

1. Sandip Rakshit, "R Programming for Beginners", McGraw Hill Education (India), 2017.
2. Cotton, R., "Learning R: a step by step function guide to data analysis". 1st edition. O'reilly Media Inc., 2013.

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Programme						
Course Name	**Digital Tools for Business and Research**					
Type of Course	DSC B/ DSC C					
Course Code	**MG4DSCCMA201**					
Course Level	**200**					
Course Summary	This course provides a comprehensive introduction to the data analytical tools such as SPSS and PSPP empowering participants to proficiently perform a wide range of statistical procedures and effectively visualize and interpret data.					
Semester	4	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any	Nil					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate the value of information in decision-making and illustrate the SPSS/ PSPP tools to manage data and its analysis.	U	1
2	Illustrate data transformation techniques to describe data numerically and graphically.	U	1
3	Apply statistical testing methods, correlation and regression to analyse and test data.	A	2
4	Apply various data manipulation and visualization techniques to process and analyse the data to gain insights.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Introduction to SPSS/PSPP**			
	1.1	Data and Information – Value of Information in Decision Making - Information and Analysis of Business Research – Data Processing Software- Fundamentals of Data Analytics and Statistics: Use data for forecasting & decision-making, use data analytics in business.	4	1
	1.2	SPSS/PSPP : Menus, Tool bar – SPSS/PSPP layout- Variable View – Data View – Output View – Terminology, Basic Steps for performing any Statistical Procedure.	4	1
	1.3	Data Management– Creating a Data File- Defining Variables -Entering and Saving Data- Opening an existing Data File-Inserting Variables and Cases - Identifying Duplicate Cases and Unusual Cases- Sorting Cases- -Selecting Cases-Listing Cases.	7	1
2	**Data Transformation**			
	2.1	Computing a New Variable - Recoding Variables- Automatic Recode-Visual Binning - Rank Cases.	5	2
	2.2	Describing Data Numerically -Types of Measurement Scales- Summary Measures- Frequencies, Explore, Crosstabs, Descriptive Statistics - Number of cases, Minimum, Maximum, Sum, Mean, Standard Deviation, Variance, Kurtosis, Skewness.	5	2
	2.3	Describing Data Graphically- Line Chart, Pie Chart, Bar Chart, Histogram and the Standard Normal Curve, Box Plot, Scatter Diagram, P-P Plot, Q-Q Plot, Chart Builder, Formatting Charts.	5	2

3	**Statistical Testing**			
	3.1	One Sample t-Test: Hypothesis Testing- Steps in Hypothesis Testing, Assumptions - Testing for Population Mean- Statistical and Practical Significance.	2	3
	3.2	Independent Sample t-Test -Assumptions - Procedure for Testing for Differences in Means between Groups. Paired Samples t-Test -Assumptions - Procedure for Paired Sample t-test	4	3
	3.3	One-Way ANOVA- Assumptions - Procedure for Testing for Differences in Means between Groups. Two-Way ANOVA - Assumptions - Procedure for Undertaking Two-Way ANOVA.	3	3
	3.4	Correlation - Assumptions - Procedure for Undertaking Correlations- Bivariate Correlations, Rank Correlations, Partial Correlations- Regression- Assumptions- Procedure for undertaking Linear Regression.	4	3
	3.5	Nonparametric Statistics- Chi-Square Test, Kruskal-Wallis Test.	2	3
4	**Lab Practice**			
	4.1	Data Entry and Management: Create a data file, define variables, inserting variables and cases, selecting cases, and identifying and handling duplicate or unusual cases.	5	4
	4.2	Data Transformation Techniques: Exercises including computing new variables, recoding variables using automatic methods and visual binning, and ranking cases.	5	4
	4.3	Statistical Analysis: Exercises covering summarizing data using frequency distributions, cross-tabulation, descriptive data analysis.	5	4
	4.4	Graphical Data Representation: Exercises to describe data graphically, employing charts and graphs to enhance data visualization and interpretation.	5	4
	4.5	Correlation and Regression Analysis: Exercises involving correlation and regression analysis-	5	4

		Analyze relationships between variables, interpret correlation coefficients, and perform regression analysis.		
	4.6	Statistical Tests: Exercises to implement t-Tests, ANOVA, Chi-Square test and Kruskal-Wallis Test.	5	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **C. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. MCQ 3. Assignments **CCA for Practical: 15 Marks** 5. Practical assignments 6. Lab Record 7. Observation of practical skills 8. Viva
	D. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: Very Short Answer Questions (Answer all) - (10*1=10 Marks) Part B: Short Answer Questions (4 out of 6 Questions) (4*5=20 Marks) Part C: Essay Questions (2 out of 3 Questions) - (2*10=20 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: Two Questions (Exercises covering the topics Data Entry and Management, Data Transformation Techniques, Statistical Analysis, Graphical Data Representation, Correlation & Regression Analysis and Statistical tests) 1. Code - 10 Marks 2. Output - 10 Marks

	3. Viva - 5 Marks 4. Record - 10 Marks

REFERENCES

1. Kiran Pandya, Smruti Bulsari & Sanjay Sinha., "SPSS in Simple Steps", First edition, Dreamtech Press India Pvt. Ltd, Delhi, 2011.

SUGGESED READINGS

1. Tutorial of IBM SPSS Statistics.
2. Field A., "Discovering Statistics Using SPSS", Fourth Edition, SAGE Publishers, 2013
3. Keith Gordon, "Principles of Data Management", BCS Publications, UK

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Programme						
Course Name	**E-Tourism**					
Type of Course	DSC C					
Course Code	**MG4DSCCMA202**					
Course Level	**200**					
Course Summary	The objective of this course is to help the students to understand the use of Information technology in the tourism industry.					
Semester	4	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any						

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Demonstrate a comprehensive understanding of E-tourism.	U	1
2	Identify and analyze E-Tourism components and functions.	An	1
3	Illustrate different Payment Systems in E-Tourism.	U	1
4	Analyze the trends in E-Tourism and apply information technology in E-Tourism by integrating social media platforms and Artificial Intelligence.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to E-tourism: Historical Development - Strategic, Tactical and Operational use of IT in Tourism.	4	1
	1.2	Global Distribution System, CRS- concept, uses of CRS in Airlines, Railways, Hotel booking, Importance of E-ticketing.	4	1
	1.3	Case Study of Amadeus - Galileo, World Span, SABRE, Abacus.	7	1
2	2.1	Components of E-Tourism: E-Airlines, E-Hospitality, E-Tour Operators, E-Travel Agencies and E-Destination.	6	2
	2.2	Functions of E-Tourism	3	2
	2.3	Business models - Business to Business (B2B) - Business to Consumer (B2C) - Consumer to Business (C2B) - Consumer to consumer (C2C) - Business to Employees (B2E) & Business to Government (B2G).	6	2
3	3.1	Payment Systems in E-Tourism: Payment Gateway - Billing and Settlement Plan (BSP)	5	3
	3.2	Security Issues and Certification	4	3
	3.3	Digital Payment Methods: Usage of digital wallets in E-Tourism, Quick pay options such as Tez, Samsung Pay, and BHIM, Virtual banks like Paytm and Airtel Money, Case Study	6	3
4	4.1	Future of E-tourism - Travel Blogs - Importance of travel blogs in the tourism industry –Case Study.	5	4
	4.2	E-marketing and promotion of tourism products- Utilization of social media platforms: Facebook, X(Twitter), YouTube, WhatsApp.	5	4

	4.3	Integration of Artificial Intelligence (AI) in E-tourism-Virtual Reality (VR) applications in the travel sector.	5	4
	4.4	Project works integrating Information Technology in E-Tourism.	15	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecturing, Practicum -Case Study and project
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. Assignments **CCA for Practical: 15 Marks** 1. Case study / Project review1 2. Case study / Project review2
	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test(50 Marks)** Part A: Very Short Answer Questions (Answer all) – (10*1=10 Marks) Part B: Short Answer Questions(4 out of 6 Questions) - (4*5=20 Marks) Part C: Essay Questions(2 out of 3 Questions) – (2*10=20 Marks) **ESE for Practical: 35 Marks (2 Hrs)** 1. Presentation of Case study/ Project (20 marks) 2. Report- 10 Marks 3. Viva- 5 Marks

REFERENCES

1. **Sheldon, P.** (2002). Tourism Information Technology. CABI.
2. **Inkpen, G.** (2000). Information Technology for Travel and Tourism. Addison Wesley.

SUGGESTED READINGS

1. **Buhalis, D.** (2004). E Tourism: Information Technology for Strategic Tourism Management. Prentice Hall.
2. **Poon, A.** (1998). Tourism, Technology, and Competitive Strategies. CABI.
3. **Rayport, J.F., & Jaworski, B.J.** (2003). Introduction to E-Commerce. McGraw Hill.
4. **Eisenmann, T.R.** (2002). Internet Business Models – Text and Cases. McGraw Hill.
5. **Malvino, A.P.** (1995). Electronic Principles. McGraw-Hill.
6. **Gretzel, U., Sigala, M., & Xiang, Z. (Eds.)** (2023). *Handbook of e-Tourism*. Springer.
7. **Law, R., Fong, D.K.C., & Buhalis, D.** (2021). *Progress in Information and Communication Technology in Tourism*. Springer.

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Programme					
Course Name	**Digital Marketing**				
Type of Course	DSC B				
Course Code	**MG5DSCCMA300**				
Course Level	**300**				
Course Summary	This course covers the topics such as the fundamentals of digital marketing, SEO, SEM, social media and email marketing, content strategy, and web analytics, providing a well-rounded understanding of key techniques and tools used in digital marketing.				
Semester	5	Credits		4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others
		4	0	0	0
Pre-requisites, if any					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Describe the fundamentals of digital marketing and compare different types of digital marketing.	U	1
2	Illustrate Google Ads, Search Engine Optimization and Search Engine Marketing.	U	1
3	Demonstrate Social Media Marketing and Email Marketing strategies.	U	1
4	Demonstrate effective content strategies and web analytics.	U	1

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to Digital Marketing: Defining digital marketing, Types of Digital Marketing.	4	1
	1.2	Trends & Scenarios of the Digital Marketing Industry, Importance of digital marketing. Difference between traditional marketing and digital marketing.	8	1
2	2.1	Search Engine Optimisation (SEO): Introduction to SOE, History & Growth of SEO, On-page Optimization, Off-page Optimization, Keywords.	8	2
	2.2	Google Ads: Introduction to Search Engine Marketing, Display and Discovery Ads., Ad Creation, Approval & Extensions, Site Targeting, Keyword Targeting.	8	2
3	3.1	Social Media Marketing: Definition of Social Media Marketing & Social Media, Social Networking, Use of Different Social Media Platforms, Blogging, Video Creation & Sharing, Content Creation.	10	3
	3.2	Email Marketing: Importance of Email Marketing, Email-Marketing Platforms, Creating & Tracking e-Mailers, Create Forms.	6	3
4	4.1	Content Strategy: Blogging, Article Marketing, Promotions, Guest Blogging, Content Marketing Tools.	6	4
	4.2	Web Analytics: Introduction to Web Analytics, Introduction to Audience Reports, Traffic & Content Report, Campaign Tagging & Reporting, Linking,	10	4

		Using Google AdWords Data, Real-time Data.		
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 30 Marks** 1. Written tests 2. Assignments
	B. Semester End Examination **ESE for Theory: 70 Marks (2 Hrs)** **Written Test (70 Marks)** Part A: Very Short Answer Questions (Answer all) - (10*2=20 Marks) Part B: Short Answer Questions (6 out of 8 Questions) - (6*5=30 Marks) Part C: Essay Questions (2 out of 3 Questions) – (2*10=20 Marks)

REFERENCES:

1. Ryan Deiss & Russ Henneberry, "Digital Marketing for Dummies", 1st Ed., 2017.
2. Simon Kingsnorth, "Digital Marketing Strategy: An Integrated Approach to Online Marketing", KoganPage Ltd., 2016.

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Programme						
Course Name	**Data Visualization and Business Analytics**					
Type of Course	DSC B					
Course Code	**MG6DSCCMA300**					
Course Level	**300**					
Course Summary	This course provides a comprehensive introduction to data visualization tools, covering popular platforms such as Tableau and Power BI, and enabling students to create interactive dashboards and visualizations.					
Semester	6	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3	0	1	0	75
Pre-requisites, if any	Nil					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Summarize the concepts of data visualization and illustrate data visualization using Python libraries.	U	1
2	Demonstrate how to create interactive data visualization using Tableau.	U	1
3	Demonstrate how to create interactive dashboard using Power BI.	U	1
4	Construct effective data visualization with Python libraries and Tableau, and build interactive dashboards with Power BI.	A	2

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	**Introduction**			
	1.1	Data Visualization- Elements of Data Visualization- Importance of Data Visualization- Data Visualization Elements and Tools – Charts and Graphs- Grouping and categorization of data visualization tools.	4	1
	1.2	Software tools for Data Visualization: Commercial Apps - Qlikview, Tableau, Power BI, Open-Source Apps - Google Data Studio, Google Charts, D3.JS- Features.	4	1
	1.3	Python Libraries for Data Visualization- Matplotlib, Pandas, Seaborn – Exercises Using Matplotlib - Using Pandas for Plotting- Using Seaborn for Visualization.	7	1
2	**Tableau - An Interactive Analytics platform**			
	2.1	Tableau Product Suite. How to connect to a data source using Tableau interface. Tableau interface and basic terminologies.	4	2
	2.2	Create – Time series chart, Bullet chart, Area chart, Symbol map, Score cards.	3	2
	2.3	Heat Map – Introduction, Uses of Heat Map, Procedure to create heat map in Tableau.	3	2
	2.4	Building interactive dashboards using Tableau.	5	2
3	**Power BI - Unleash the power of business analytics**			
	3.1	Introduction to Power BI , Preparing data with Power BI.	4	3
	3.2	Data visualization using Power BI- Creating simple visualization, Map Visualization, Combination Charts.	5	3
	3.3	Dashboard in Power BI - creating, sharing, Tiles in Dashboard.	6	3

4	**Lab Practice**			
	4.1	Hands-on Visualization Exercises and case studies using Matplotlib, Pandas and Seaborn.	6	4
	4.2	Practical session on connecting data source using Tableau interface.	4	4
	4.3	Practical session on creating time series chart, bullet chart, area chart, Symbol map, score cards.	4	4
	4.4	Procedure to create heat map.	4	4
	4.5	Practical session on Building interactive dashboards.	4	4
	4.6	Practical session on creating visualizations using Power BI.	4	4
	4.7	Practical session on development of stories using tableau and cracking insights from using interactive dashboards.	4	4
5		Teacher Specific Content		

Teaching and Learning Approach	**Classroom Procedure (Mode of transaction)** Lecture, Practical
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** **CCA for Theory: 25 Marks** 1. Written test 2. MCQ 3. Assignments **CCA for Practical: 15 Marks** 1. Practical assignments 2. Lab Record 3. Observation of practical skills 4. Viva

	B. Semester End Examination **ESE for Theory: 50 Marks (1.5 Hrs)** **Written Test (50 Marks)** Part A: MCQ (Answer all) - (20*1=20 Marks) Part B: Short Answer Questions (10 out of 12 Questions) (10*3=30 Marks) **ESE for Practical: 35 Marks (1.5 Hrs)** Practical test: Two Questions a. Question1: Visualization exercises using Python Matplotlib, Pandas and Seaborn libraries. b. Question2: Exercises to build interactive dashboards using Tableau or Power BI. 1. Code - 10 Marks 2. Output - 10 Marks 3. Viva - 5 Marks 4. Record - 10 Marks

REFERENCES

1. Kalilur Rahman, "Python Data Visualization Essential Guide", BPB Publications, 1st ed., 2021.
2. Alexander Loth, "Visual Analytics with Tableau", Wiley, 2019.
3. Alberto Ferrari and Marco Russo, "Introducing Microsoft Power BI", Microsoft Press, 2016.

SUGGESTED READINGS

1. Marleen Meier, David Baldwin, "Mastering Tableau 2021", 3rd ed., Packt Publishing, 2021.
2. Errin O'Connor, "Microsoft Power BI Dashboards Step by Step", Pearson Edn., 2019.