

Semester I - Allied -I Theory for other departments

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|----------------------------|---|-----------------|---|---|---|---|---------------------------|-------------|-------|----------|---------------------|
| | | | | | | | | | CIA | External | Total |
| 23BSOA1 | OFFICE AUTOMATION | Allied I Theory | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| Learning Objectives | | | | | | | | | | | |
| LO1 | Understand the basics of computer systems and its components. | | | | | | | | | | |
| LO2 | Understand and apply the basic concepts of a word processing package. | | | | | | | | | | |
| LO3 | Understand and apply the basic concepts of electronic spreadsheet software. | | | | | | | | | | |
| LO4 | Understand and apply the basic concepts of database management system. | | | | | | | | | | |
| LO5 | Understand and create a presentation using PowerPoint tool. | | | | | | | | | | |
| | Contents | | | | | | | | | | No. of Hours |
| UNIT I | Introductory concepts: Memory unit– CPU-Input Devices: Key board, Mouse and Scanner.Outputdevices:Monitor,Printer.IntroductiontoOperatingsystems&itsfeatures:DOS– UNIX–Windows. IntroductiontoProgrammingLanguages. | | | | | | | | | | 6 |
| UNIT II | Word Processing: Open, Save and close word document; Editing text – tools, formatting, bullets;SpellChecker - Document formatting – Paragraph alignment, indentation, headers and footers,numbering;printing– Preview,options,merge. | | | | | | | | | | 6 |
| UNIT III | Spreadsheets: Excel– opening,enteringtextanddata,formatting,navigating;Formulas– entering,handlingand copying;Charts–creating,formatting and printing,analysistables,preparationoffinancialstatements,introductiontodatanaalytics. | | | | | | | | | | 6 |
| UNIT IV | Database Concepts: The concept of data base management system; Data field, records, and files,Sorting and indexing data; Searching records. Designing queries, and reports; Linking of datafiles; Understanding Programming environment in DBMS; Developing menu drive applicationsinquerylanguage(MS–Access). | | | | | | | | | | 6 |
| UNIT V | Power point: Introduction to Power point - Features – Understanding slide typecasting &viewingslides – creating slide shows. Applying special object – including objects & pictures – Slidetransition– Animationeffects,audioinclusion,timers. | | | | | | | | | | 6 |
| | Total | | | | | | | | | | 30 |
| Course Outcomes | | | | | | | Programme Outcomes | | | | |
| CO | On completion of this course, students will | | | | | | | | | | |
| CO1 | Possess the knowledge on the basics of computers and its components | | | | | | PO1,PO2,PO3,PO6,PO8 | | | | |
| CO2 | Gain knowledge on Creating Documents, spreadsheet and | | | | | | PO1,PO2,PO3,PO6 | | | | |

| | | |
|------------------------|---|-----------------|
| | presentation. | |
| CO3 | Learn the concepts of Database and implement the Query in Database. | PO3,PO5,PO7 |
| CO4 | Demonstrate the understanding of different automation tools. | PO3,PO4,PO5,PO7 |
| CO5 | Utilize the automation tools for documentation, calculation and presentation purpose. | PO4,PO6,PO7,PO8 |
| Text Book | | |
| 1 | PeterNorton,“IntroductiontoComputers”–TataMcGraw-Hill. | |
| Reference Books | | |
| 1. | Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, “Microsoft 2003”, Tata McGrawHill. | |
| Web Resources | | |
| 1. | https://www.udemy.com/course/office-automation-certificate-course/ | |
| 2. | https://www.javatpoint.com/automation-tools | |

Mapping with Programme Outcomes:

| MAPPING TABLE | | | | | | |
|---|-------|-------|-------|-------|-------|-------|
| CO/ PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
| CO1 | 3 | 2 | 2 | 3 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Weightage of course contributed to each PSO | 15 | 14 | 14 | 15 | 15 | 15 |

S-Strong-3 M-Medium-2 L-Low-1

Semester I - Allied -I Practical for other departments

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|----------------------------|---|------------|---|---|---|---|---------|-------------|-------|---------------------|-------|
| | | | | | | | | | CIA | External | Total |
| 23BSOAP1 | OFFICE AUTOMATION LAB | Allied Lab | - | - | 2 | - | 2 | 2 | 25 | 75 | 100 |
| Learning Objectives | | | | | | | | | | | |
| LO1 | Understand the basics of computer system, operating system and I/O devices | | | | | | | | | | |
| LO2 | Understand the basics of Word Processor tool and able to create letters, reports, tables | | | | | | | | | | |
| LO3 | Understand the basics of Excel Spreadsheet tool and able to perform visible calculations and data analysis. | | | | | | | | | | |
| LO4 | Understand the basics of ACCESS database management system tool and able to create database for specific application. | | | | | | | | | | |
| LO5 | Understand the basics PowerPoint tool and able to create slide shows. | | | | | | | | | | |
| | Contents | | | | | | | | | No. of Hours | |
| UNIT I | 1. Working with windows and menus 2. Creating Folders and working with files 3. Creating Shortcuts for applications and files 4. Copying and moving files between folders 5. Deleting files and understanding recycle bin 6. Creating opening and saving text in files | | | | | | | | | 6 | |
| UNIT II | <u>MS – WORD</u> 7. Preparing an Official Letter / Business Letter / Circular Letter Covering formatting commands - font size and styles - bold, underline, upper case, lower case, superscript, subscript, indenting paragraphs, spacing between lines and characters, tab settings etc., 8. Preparing a newsletter: To prepare a newsletter with borders, two columns text, header and footer and inserting a graphic image and page layout. 9. Creating and editing the table to create a table using table menu, to create a monthly calendar using cell editing operations like inserting, joining, deleting, splitting and merging cells, to create a simple statement for math calculations viz. Totalling the column. 10. Creating numbered lists and bulleted lists to create numbered list with different formats (with numbers, alphabets, roman letters), to create a bulleted list with different bullet characters. 11. Printing envelopes and mail merge, to print envelopes with from addresses and to addresses, to use mail merge facility for sending a circular letter to many persons, to use mail merge facility for printing mailing labels. 12. Using the special features of word to find and replace the text, to spell check and correct, to generate table of contents for a document. | | | | | | | | | 6 | |

| UNIT III | <p><u>MS - EXCEL</u></p> <p>13. Using formulas and functions: To prepare a Worksheet showing the monthly sales of a company in different branch offices (Showing Total Sales, Average Sales).</p> <p>14. Creating a Chart: To create a chart for comparing the monthly sales of a company in different branch offices.</p> <p>15. Sorting Data, Filtering Data and creation of Pivot tables.</p> <p>16. Create a sales table using the following data :</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Year1</th> <th>Year2</th> <th>Year3</th> <th>Year4</th> </tr> </thead> <tbody> <tr> <td>Rice</td> <td>1000</td> <td>1050</td> <td>1100</td> <td>1200</td> </tr> <tr> <td>Sugar</td> <td>950</td> <td>1050</td> <td>1150</td> <td>1200</td> </tr> <tr> <td>Dal</td> <td>1100</td> <td>1200</td> <td>1200</td> <td>1300</td> </tr> </tbody> </table> <p>a. Draw the bar graph to compare the sales of the three items for four years.</p> <p>b. Draw a line graph to compare the sales of three items for four years using insert option.</p> <p>c. Use condition, to highlight all the cells having value ≥ 1000 with red color (Use conditional formatting).</p> | Item | Year1 | Year2 | Year3 | Year4 | Rice | 1000 | 1050 | 1100 | 1200 | Sugar | 950 | 1050 | 1150 | 1200 | Dal | 1100 | 1200 | 1200 | 1300 | 6 |
|----------|---|-------|-------|-------|-------|-------|------|------|------|------|------|-------|-----|------|------|------|-----|------|------|------|------|---|
| Item | Year1 | Year2 | Year3 | Year4 | | | | | | | | | | | | | | | | | | |
| Rice | 1000 | 1050 | 1100 | 1200 | | | | | | | | | | | | | | | | | | |
| Sugar | 950 | 1050 | 1150 | 1200 | | | | | | | | | | | | | | | | | | |
| Dal | 1100 | 1200 | 1200 | 1300 | | | | | | | | | | | | | | | | | | |
| UNIT IV | <p><u>MS - ACCESS</u></p> <p>17. Create a database “Student” with</p> <ol style="list-style-type: none"> Atleast one table named “Mark Sheet” with field name “Student Name, Roll Number, Mark1, Mark2, Mark3, Mark4, Total” The data types are, Student Name : text, Roll Number : number, Mark1 to Mark4 : number, Total : number. Make Roll Number the primary key. Enter data in the table. The total must be calculated using update query. Use query for sorting the table according to the descending/ascending order of the total marks. <p>18. In addition to the table above,</p> <ol style="list-style-type: none"> Add an additional field “Result” to the “Mark Sheet” table. Enter data for at least 10 students. Calculate the result for all the students using update query. (If total ≥ 200, then pass, else fail). Search the students, whose name starts with “An”. <p>Show the names and total marks of the students who have passed the examination.</p> | 6 | | | | | | | | | | | | | | | | | | | | |
| UNIT V | <p><u>MS - POWERPOINT</u></p> <p>19. Creating a new presentation based on a template – Using Auto content wizard, design template and plain blank presentation.</p> <p>20. Creating a presentation with slide transition – Automatic and Manual with different effects.</p> <p>21. Creating a presentation applying custom animation effects – applying multiple effects to the same object and changing to a different effect and removing effects.</p> <p>22. Creating and printing handouts.</p> | 6 | | | | | | | | | | | | | | | | | | | | |

| | | | |
|------------------------|---|---------------------------|-----------|
| | Total | | 30 |
| Course Outcomes | | Programme Outcomes | |
| CO | On completion of this course, students will | | |
| CO1 | Possess the knowledge on the basics of computers and its components | PO1,PO2,PO3,PO6,PO8 | |
| CO2 | Gain knowledge on Creating Documents, spreadsheet and presentation. | PO1,PO2,PO3,PO6 | |
| CO3 | Learn the concepts of Database and implement the Query in Database. | PO3,PO5,PO7 | |
| CO4 | Demonstrate the understanding of different automation tools. | PO3,PO4,PO5,PO7 | |
| CO5 | Utilize the automation tools for documentation, calculation and presentation purpose. | PO4,PO6,PO7,PO8 | |
| Text Book | | | |
| 1 | PeterNorton,“IntroductiontoComputers”–TataMcGraw-Hill. | | |
| Reference Books | | | |
| 1. | Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, “Microsoft 2003”, Tata McGrawHill. | | |
| Web Resources | | | |
| 1. | https://www.udemy.com/course/office-automation-certificate-course/ | | |
| 2. | https://www.javatpoint.com/automation-tools | | |

Mapping with Programme Outcomes:

| MAPPING TABLE | | | | | | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|
| CO/ PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
| CO1 | 3 | 2 | 2 | 3 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Weightage of course contributed to each PSO | 15 | 14 | 14 | 15 | 15 | 15 |

S-Strong-3 M-Medium-2 L-Low-1

Semester II – Allied II Theory for other departments

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|---------------------------|--|-------------------|---|---|---|---|--------------------------|-------------|-------|----------|---------------------|
| | | | | | | | | | CIA | External | Total |
| 23BSOA2 | PROGRAMMING IN C | A-I Allied Theory | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| Learning Objective | | | | | | | | | | | |
| LO1 | To familiarize the students with the Programming basics and the fundamentals of C, Datatypes in C, Mathematical and logical operations. | | | | | | | | | | |
| LO2 | To understand the concept using if statements and loops | | | | | | | | | | |
| LO3 | This unit covers the concept of Arrays and Functions | | | | | | | | | | |
| LO4 | This unit covers the concept of Structurs and unions and Preprocessors | | | | | | | | | | |
| LO5 | To understand the concept of implementing pointers. | | | | | | | | | | |
| | Contents | | | | | | | | | | No. of Hours |
| UNIT I | Overview of C: Importance of C, sample C program, C program structure, executing C program. Constants, Variables, and Data Types: Character set, C tokens, keywords and identifiers, constants, variables, data types, declaration of variables, Assigning values to variables---Assignment statement, declaring a variable as constant, as volatile. Operators and Expression: Arithmetic, Relational, logical, assignment, increment, decrement, conditional, bitwise and special operators, arithmetic expressions, operator precedence, type conversions, mathematical functions Managing Input and Output Operators: Reading and writing a character, formatted input, formatted output. | | | | | | | | | | 6 |
| UNIT II | Decision Making and Branching: Decision making with If, simple IF, IF ELSE, nested IF ELSE , ELSE IF ladder, switch, GOTO statement. Decision Making and Looping: While, Do-While, For, Jumps in loops. | | | | | | | | | | 6 |
| UNIT III | Arrays: Declaration and accessing of one & two-dimensional arrays, initializing two-dimensional arrays, multidimensional arrays. Functions: The form of C functions, Return values and types, calling a function, categories of functions, Nested functions, Recursion, functions with arrays, call by value, call by reference, storage classes-character arrays and string functions. | | | | | | | | | | 6 |
| UNIT IV | Structures and Unions: Defining, giving values to members, initialization and comparison of structure variables, arrays of structure, arrays within structures, structures within structures, structures and functions, unions. Preprocessors: Macro substitution, file inclusion. | | | | | | | | | | 6 |
| UNIT V | Pointers: definition, declaring and initializing pointers, accessing a variable through address and through pointer, pointer expressions, pointer increments and scale factor, pointers and arrays, pointers and functions, pointers and structures. | | | | | | | | | | 6 |
| | Total | | | | | | | | | | 30 |
| Course Outcomes | | | | | | | Programme Outcome | | | | |
| CO | On completion of this course, students will | | | | | | | | | | |
| CO1 | Remember the program structure of C with its syntax and semantics | | | | | | PO1,PO3,PO5 | | | | |
| CO2 | Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) | | | | | | PO2,PO3,PO6 | | | | |

| | | |
|-----------------|---|-------------|
| CO3 | Apply the programming principles learnt in real-time problems | PO3,PO4,PO5 |
| CO4 | Analyze the various methods of solving a problem and choose the best method | PO4,PO5,PO6 |
| CO5 | Code, debug and test the programs with appropriate test cases | PO5,PO6 |
| Text Book | | |
| 1 | E. Balagurusamy, Programming in ANSI C, Fifth Edition, Tata McGraw-Hill, 2010. | |
| Reference Books | | |
| 1. | Byron Gottfried, Schaum's Outline Programming with C, Fourth Edition, Tata McGraw-Hill, 2018. | |
| 2. | Kernighan and Ritchie, The C Programming Language, Second Edition, Prentice Hall, 1998 | |
| 3. | Yashavant Kanetkar, Let Us C, Eighteenth Edition, BPB Publications, 2021 | |
| Web Resources | | |
| 1. | https://codeforwin.org/ | |
| 2. | https://www.geeksforgeeks.org/c-programming-language/ | |
| 3. | http://en.cppreference.com/w/c | |
| 4. | http://learn-c.org/ | |
| 5. | https://www.cprogramming.com/ | |

Mapping with Programme Outcomes:

| CO/PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
|--|-------|-------|-------|-------|-------|-------|
| CO 1 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 2 | 3 | 3 | 3 | 2 | 3 | 3 |
| CO 3 | 2 | 3 | 2 | 3 | 3 | 2 |
| CO 4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 5 | 3 | 3 | 3 | 3 | 3 | 2 |
| Weight age of course contributed to each PSO | 14 | 15 | 14 | 14 | 15 | 13 |

S-Strong-3 M-Medium-2 L-Low-1

Semester II - Allied – II Practical (to other departments)

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|-------------------------|--|----------------------|---|---|---|---|---------|-------------|---------------------|--------------------------|-------|
| | | | | | | | | | CIA | External | Total |
| 23BSOAP 2 | PROGRAMMING IN C LAB | A-I Allied Practical | - | - | 2 | - | 2 | 2 | 25 | 75 | 100 |
| Course Objective | | | | | | | | | | | |
| LO1 | To familiarize the students with the Programming basics and the fundamentals of C, Datatypes in C, Mathematical and logical operations. | | | | | | | | | | |
| LO2 | To understand the concept using if statements and loops | | | | | | | | | | |
| LO3 | This unit covers the concept of Arrays and Functions | | | | | | | | | | |
| LO4 | This unit covers the concept of Structures and unions and Preprocessors | | | | | | | | | | |
| LO5 | To understand the concept of implementing pointers and files | | | | | | | | | | |
| | List of Exercises | | | | | | | | No. of Hours | Course Objectives | |
| UNIT I | Variables, Data types, Constants and Operators 1.Evaluation of expression ex: $((x+y)^2 * (x+z))/w$ 2.Temperature conversion problem (Fahrenheit to Celsius) 3.Program to convert days to months and days (Ex: 364 days = 12 months and 4 days) 4.Solution of quadratic equation 5.Salesman salary (Given: Basic Salary, Bonus for every item sold, commission on the total monthly sales) | | | | | | | | 6 | | |
| UNIT II | Decision making Statements 6.Maximum of three numbers 7.Calculate Square root of five numbers (using gototatement) 8.Pay-Bill Calculation for different levels of employee (Switch statement) 9. Fibonacci series 10.Floyds Triangle 11.Pascal's Triangle | | | | | | | | 6 | | |
| UNIT III | Arrays, Functions and Strings 12.Prime numbers in an array 13.Sorting data (Ascending and Descending) 14.Matrix Addition and Subtraction 15.Matrix Multiplication 16.Function with no arguments and no return values 17.Function that convert lower case letters to upper case 18. Factorial using recursion. 19.Perform String Operations using Switch Case. | | | | | | | | 6 | | |
| UNIT IV | Structures and Macros 20.Structure that describes a Hotel (name, address, grade, avg room rent, number of rooms) Perform some operations (list of hotels of a given grade etc.) 21. Using Pointers in Structures. 22.Cricket team details using Union. 23.Write a macro that calculates the max and min of two numbers 24.Nested macro to calculate Cube of a number. | | | | | | | | 6 | | |

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| UNIT V | Pointers and Files 25.Evaluation of Pointer expressions 26.Function to exchange two pointer values 27.Creation, insertion and deletion in a linked list 28.Program to read a file and print the data. 29.Program to receive a file name and a line of text as command line arguments and write the text to the file 30. Program to copy the content of one file to another file. | 6 |
| | Total | 30 |
| | Course Outcomes | Programme Outcome |
| CO | On completion of this course, students will | |
| 1 | Remember the program structure of C with its syntax and semantics | PO1,PO3,PO5 |
| 2 | Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) | PO2,PO3,PO6 |
| 3 | Apply the programming principles learnt in real-time problems | PO3,PO4 |
| 4 | Analyze the various methods of solving a problem and choose the best method | PO4,PO5,PO6 |
| 5 | Code, debug and test the programs with appropriate test cases | PO4,PO6 |
| | Text Book | |
| 1 | E. Balagurusamy, Programming in ANSI C, Fifth Edition, Tata McGraw-Hill, 2010. | |
| | Reference Books | |
| 1. | Byron Gottfried, Schaum's Outline Programming with C, Fourth Edition, Tata McGraw-Hill, 2018. | |
| 2. | Kernighan and Ritchie, The C Programming Language, Second Edition, Prentice Hall, 1998 | |
| 3. | Yashavant Kanetkar, Let Us C, Eighteenth Edition, BPB Publications, 2021 | |
| | Web Resources | |
| 1. | https://codeforwin.org/ | |
| 2. | https://www.geeksforgeeks.org/c-programming-language/ | |
| 3. | http://en.cppreference.com/w/c | |
| 4. | http://learn-c.org/ | |
| 5. | https://www.cprogramming.com/ | |

Mapping with Programme Outcomes:

| CO/PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
|---|-------|-------|-------|-------|-------|-------|
| CO 1 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| CO 3 | 3 | 3 | 2 | 3 | 3 | 2 |
| CO 4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Weight age of course contributed to each PSO | 14 | 15 | 14 | 15 | 15 | 14 |

S-Strong-3 M-Medium-2 L-Low-1

Semester III - Allied – III Theory (offered by B.Sc. Software Dept to other departments)

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|---------------------------|--|---------------------|---|---|---|---|-------------------|-------------|-------|----------|--------------|
| | | | | | | | | | CIA | External | Total |
| 23BSOA3 | Internet and Web Design | A-III Allied Theory | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| Learning Objective | | | | | | | | | | | |
| LO1 | To familiarize the internet and its capabilities | | | | | | | | | | |
| LO2 | To understand the structure Hyper Text Markup Language and handle basic tags for text and image display | | | | | | | | | | |
| LO3 | To understand the use of lists and tables | | | | | | | | | | |
| LO4 | To understand the necessity of dynamic content on web and screen space management using framesets | | | | | | | | | | |
| LO5 | To understand the features of DOM (Document Object Model) and its elements for data capture | | | | | | | | | | |
| UNIT | Contents | | | | | | | | | | No. of Hours |
| I | UNIT I : Introduction to the Internet Electronic mail – Resource Sharing – Remote Login – World Wide Web – Search Engine – Browsers – Introduction to static, dynamic and active web pages. Introduction to HTML: Designing a Home page - History of HTML - HTML Generations - HTML Documents - Anchor Tag - Hyper links | | | | | | | | | | 6 |
| II | UNIT II : Head and Body Sections Header Section – Title – Links - Colorful Web page - Comment Lines - Designing the Body Section: Heading – Printing - Aligning the Headings - Horizontal Rule - Paragraph-Tab Settings - Images and Pictures - Embedding Images | | | | | | | | | | 6 |
| III | UNIT III: Ordered and Un Ordered Lists: Lists – Un Ordered Lists - Headings in a List - Ordered Lists - Nested Lists - Table Handling: Table creation in HTML - width of the Table and Cells - Cells Spanning Multiple Rows/Columns - Coloring Cells - Column Specification | | | | | | | | | | 6 |
| IV | UNIT IV : DHTML and Style Sheets Defining Styles - Elements of Styles - Linking a Style Sheet to an HTML Document – In-line Styles - Internal and External Style Sheets - Multiple Styles - Frames: Frameset Definition - Frame Definition - Nested Framesets | | | | | | | | | | 6 |
| V | UNIT V: Forms Action Attribute - Method Attribute - Enctype Attribute - Drop down list - Check Boxes - Radio Buttons - Text Field - Text area - Password and Hidden Fields - Submit and Reset Buttons - Designing Sample Forms | | | | | | | | | | 6 |
| | Total | | | | | | | | | | 30 |
| Course Outcomes | | | | | | | Programme Outcome | | | | |
| CO | On completion of this course, students will | | | | | | | | | | |
| CO1 | To appreciate the use of internet and design of web pages | | | | | | PO1,PO3,PO5 | | | | |
| CO2 | To be able to use all the basic HTML tags used to design web content with multimedia elements | | | | | | PO2,PO3,PO6 | | | | |
| CO3 | To be able to create and format different types of lists and tables | | | | | | PO3,PO4,PO5 | | | | |
| CO4 | To be able to specify styles for web pages and dynamically | | | | | | PO4,PO5,PO6 | | | | |

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| | change the appearance of web pages and manage screen space by defining multiple frames | |
| CO5 | To be able to design web forms for data capture and transmit to the server | PO5,PO6 |
| Text Books | | |
| 1 | C. Xavier(2000), World Wide Web design with HTML - Tata McGraw Hill Publishing Company Limited ISBN 9780074639719 | |
| 2 | Ivan Bayross (2012) HTML 5 and CSS 3 Made Simple, BPB Publications ISBN 9788183334419 | |
| Reference Books | | |
| 1. | Jon Duckett (2011),HTML and CSS: Design and Build Webs Illustrated, Wiley | |
| Web Resources | | |
| 1. | http://www.pagetutor.com/html_tutor/index.html | |
| 2. | http://www.tutorialspoint.com/html/html_tutorial.pdf | |
| 3. | http://www.htmlcodetutorial.com/ | |
| 4. | http://www.w3schools.com | |

Mapping with Programme Outcomes:

| CO/PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
|---|-------|-------|-------|-------|-------|-------|
| CO 1 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 2 | 3 | 3 | 3 | 2 | 3 | 3 |
| CO 3 | 2 | 3 | 2 | 3 | 3 | 2 |
| CO 4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO 5 | 3 | 3 | 3 | 3 | 3 | 2 |
| Weightage of course contributed to each PSO | 14 | 15 | 14 | 14 | 15 | 13 |

S-Strong-3 M-Medium-2 L-Low-1

Semester III - Allied – III Practical (Offered by B.sc. Software Dept to other departments)

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|-------------------------|--|------------------------|---|---|---|---|---------|-------------|---------------------|----------|-------|
| | | | | | | | | | CIA | External | Total |
| 23BSOAP 3 | INTERNET AND WEB DESIGN LAB | A-III Allied Practical | - | - | 2 | - | 2 | 2 | 25 | 75 | 100 |
| Course Objective | | | | | | | | | | | |
| LO1 | To be familiar with internet principles and HTML tags | | | | | | | | | | |
| LO2 | Learn to design web pages with simple static text displays | | | | | | | | | | |
| LO3 | Learn to design web pages with lists and tables | | | | | | | | | | |
| LO4 | Learn to dynamically control the appearance of the website with style sheets | | | | | | | | | | |
| LO5 | Learn to manage screen space with multiple contents and design forms to capture data from user | | | | | | | | | | |
| | List of Exercises | | | | | | | | No. of Hours | | |
| | 1. Create HTML file with tags using an editor and display your name and address in different colors and fonts centered across the screen. 2. Write HTML tags to display images in different height and widths 3. Write HTML tags to play audio file when play button is pressed 4. Write HTML tags to create list of courses available in a college and show their features in definition list. 5. Write HTML tags to link another web page to your page 6. Write HTML tags to create a table with text content and format it suitably with colors and features. 7. Write HTML tags to create a table with photographs of animals and show their lifespan and habits in a different page when mouse is clicked over the photos. 8. Write HTML tags to define inline style sheet and test it. 9. Write HTML tags to define internal style sheet and test it. 10. Write HTML tags to define external style sheet and test it. 11. Write HTML tags to divide the screen space into horizontal and vertical partitions and load a different html file in each partition. 12. Write HTML tags to design a form to enable a student to fill up application form for admission to a degree programme in a college. 13. Write HTML tags to design a simple personal website with three or more pages accessible from home page. 14. Write HTML tags to design a simple website to promote a product of a company. | | | | | | | | 30 | | |

| | | |
|------------------------|--|--------------------------|
| | 15. Write HTML tags to design a simple website showing images of cover page of books and display the details about the book in their own pages when mouse is clicked over the respective photographs | |
| | Total | 30 |
| Course Outcomes | | Programme Outcome |
| CO | On completion of this course, students will | |
| 1 | be able to appreciate the use and necessity of internet and websites | PO1,PO3,PO5 |
| 2 | be able to master the HTML tags and display text and multimedia contents on web pages | PO2,PO3,PO6 |
| 3 | be able to design lists and display them on web pages | PO3,PO4 |
| 4 | be able to design tables and display colourful and hypertext leading to other pages | PO4,PO5,PO6 |
| 5 | be able to manage screen space effectively with multiple frames and design web forms | PO4,PO6 |
| Web Resources | | |
| 1. | http://www.pagetutor.com/html_tutor/index.html | |
| 2. | http://www.tutorialspoint.com/html/html_tutorial.pdf | |
| 3. | http://www.htmlcodetutorial.com/ | |
| 4. | http://www.w3schools.com | |

Mapping with Programme Outcomes:

| CO/PSO | PSO 1 | | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
|--|-------|--|-------|-------|-------|-------|-------|
| CO 1 | 3 | | 3 | 3 | 3 | 3 | 3 |
| CO 2 | 2 | | 3 | 3 | 3 | 3 | 3 |
| CO 3 | 3 | | 3 | 2 | 3 | 3 | 2 |
| CO 4 | 3 | | 3 | 3 | 3 | 3 | 3 |
| CO 5 | 3 | | 3 | 3 | 3 | 3 | 3 |
| Weight age of course contributed to each PSO | 14 | | 15 | 14 | 15 | 15 | 14 |

S-Strong-3 M-Medium-2 L-Low-1

Allied Theory 4 offered by B.sc. Software Dept for other department students

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | |
|----------------------------|--|------------------|----------|---|---|---|---------------------------|-------------|-------|----------|---------------------|
| | | | | | | | | | CIA | External | Total |
| 23BSOA4 | ADVANCED EXCEL | Allied IV Theory | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| Learning Objectives | | | | | | | | | | | |
| LO1 | Handle large amounts of data | | | | | | | | | | |
| LO2 | Aggregate numeric data and summarize into categories and subcategories | | | | | | | | | | |
| LO3 | Filtering, sorting, and grouping data or subsets of data | | | | | | | | | | |
| LO4 | Create pivot tables to consolidate data from multiple files | | | | | | | | | | |
| LO5 | Presenting data in the form of charts and graphs | | | | | | | | | | |
| UNIT | Contents | | | | | | | | | | No. of Hours |
| UNIT I | Basics of Excel- Customizing common options- Absolute and relative cells- Protecting and un-protecting worksheets and cells- Working with Functions - Writing conditional expressions - logical functions - lookup and reference functions- VlookUP with Exact Match, Approximate Match- Nested VlookUP with Exact Match- VlookUP with Tables, Dynamic Ranges- Nested VlookUP with Exact Match- Using VLookUP to consolidate Data from Multiple Sheets | | | | | | | | | | 6 |
| UNIT II | Data Validations - Specifying a valid range of values - Specifying a list of valid values- Specifying custom validations based on formula - Working with Templates Designing the structure of a template- templates for standardization of worksheets - Sorting and Filtering Data -Sorting tables | | | | | | | | | | 6 |
| UNIT III | Creating Pivot tables Formatting and customizing Pivot tables- advanced options of Pivot tables- Pivot charts- Consolidating data from multiple sheets and files using Pivot tables- external data sources- data consolidation feature to consolidate data- Show Value As % of Row, % of Column, Running Total, Compare with Specific Field- Viewing Subtotal under Pivot- Creating Slicers. | | | | | | | | | | 6 |
| UNIT IV | More Functions Date and time functions- Text functions- Database functions- Power Functions - Formatting Using auto formatting option for worksheets- Using conditional formatting option for rows, columns and cells- WhatIf Analysis - Goal Seek- Data Tables- Scenario Manager. | | | | | | | | | | 6 |
| UNIT V | Charts - Formatting Charts- 3D Graphs- Bar and Line Chart together- Secondary Axis in Graphs- Sharing Charts with PowerPoint / MS Word, Dynamically- New Features Of Excel Sparklines, Inline Charts, data Charts- Overview of all the new features. | | | | | | | | | | 6 |
| | Total | | | | | | | | | | 30 |
| Course Outcomes | | | | | | | Programme Outcomes | | | | |
| CO | On completion of this course, students will | | | | | | | | | | |
| CO1 | be able to create worksheets to compute formulae automatically by copying | | | | | | PO1,PO2,PO3,PO6,PO8 | | | | |
| CO2 | be able to validate data and perform sorting and filtering data | | | | | | PO1,PO2,PO3,PO6 | | | | |
| CO3 | be able to perform What-If analysis with pivot tables. | | | | | | PO3,PO5,PO7 | | | | |

| | | |
|-----------------|---|-----------------|
| CO4 | be able to put built-in function for effective use in computations | PO3,PO4,PO5,PO7 |
| CO5 | be able to present data in the form of charts and share with other packages | PO4,PO6,PO7,PO8 |
| Text Book | | |
| 1 | Ritu Arora (2023) Mastering Advanced Excel, BPB publishers | |
| Reference Books | | |
| 1. | Ken Bluttman (2020), Microsoft Excel Formulas & Functions, 5th Edition, Learning Made Easy, Wiley | |
| Web Resources | | |
| 1. | https://www.tutorialspoint.com/advanced_excel/index.htm | |
| 2. | https://sunsreynat.wordpress.com/wp-content/uploads/2014/06/excel-2010-advanced.pdf | |
| 3. | https://www.yashada.org/yashada_2019/pdfs/e_library_cit/excel_Microsoft_Excel_2010_intermediate_YASHADA%20_June_2014%20(2).pdf | |
| 4. | https://www.w3schools.com/excel/index.php | |

Mapping with Programme Outcomes:

| MAPPING TABLE | | | | | | |
|---|-------|-------|-------|-------|-------|-------|
| CO/ PSO | PSO 1 | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
| CO1 | 3 | 2 | 2 | 3 | 3 | 3 |
| CO2 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | 3 | 3 | 3 |
| CO5 | 3 | 3 | 3 | 3 | 3 | 3 |
| Weightage of course contributed to each PSO | 15 | 14 | 14 | 15 | 15 | 15 |

S-Strong-3 M-Medium-2 L-Low-1

Semester IV Allied Practical offered by B.Sc. Software dept to other department students

| Subject Code | Subject Name | Category | L | T | P | S | Credits | Inst. Hours | Marks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|--|-----------------------|---|---|---|---|---------|-------------|--------------|----------|-------|---|-------|---|-------|---|------------|---|------|-------|---------|---|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|---------------|------|---------|-------|------|---|--------------|----|--------------|-----|----|--|--|
| | | | | | | | | | CIA | External | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23BSOAP 4 | ADVANCED EXCEL LAB | A-IV Allied Practical | - | - | 2 | - | 2 | 2 | 25 | 75 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Course Objective | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO1 | Handle large amounts of data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO2 | Aggregate numeric data and summarize into categories and subcategories | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO3 | Filtering, sorting, and grouping data or subsets of data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO4 | Create pivot tables to consolidate data from multiple files | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LO5 | Presenting data in the form of charts and graphs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | List of Exercises | | | | | | | | No. of Hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>1. Enter data Roll.Nos. & Marks in 5 subject of a student in a worksheet. Calculate his grades as per the following using HLOOKUP() functoin:</p> <table><tr><th>Marks</th><th>Grades</th></tr><tr><td>0-40</td><td>4</td></tr><tr><td>40-50</td><td>3</td></tr><tr><td>50-60</td><td>2</td></tr><tr><td>60 & above</td><td>1</td></tr></table> <p>2. Enter Names & Sales value for 10 salesmen. Calculate their bonus using VLOOKUP() function as per the following :</p> <table><tr><th>Sale</th><th>Bonus</th></tr><tr><td>0-30000</td><td>0</td></tr><tr><td>30000-40000</td><td>3000</td></tr><tr><td>40000-50000</td><td>4000</td></tr><tr><td>50000-60000</td><td>5000</td></tr><tr><td>60000-70000</td><td>6000</td></tr><tr><td>70000-80000</td><td>7000</td></tr><tr><td>80000 & above</td><td>8000</td></tr></table> <p>NAME SALE BONUS Deep 30000</p> <p>3. A worksheet contains Roll Number , Marks in 2 subjects for 50 students in a class. Calculate Result and Grade using the following: A student is declared as PASS if he gets 40 or more in both the subjects , Otherwise FAIL. All FAILED students will be given Grade IV. For PASSED students Grade will be obtained as follows :</p> <table><tr><th>AVERAGE</th><th>GRADE</th></tr><tr><td>>=60</td><td>I</td></tr><tr><td><60 but >=50</td><td>II</td></tr><tr><td><50 but >=40</td><td>III</td></tr></table> | | | | | | | | Marks | Grades | 0-40 | 4 | 40-50 | 3 | 50-60 | 2 | 60 & above | 1 | Sale | Bonus | 0-30000 | 0 | 30000-40000 | 3000 | 40000-50000 | 4000 | 50000-60000 | 5000 | 60000-70000 | 6000 | 70000-80000 | 7000 | 80000 & above | 8000 | AVERAGE | GRADE | >=60 | I | <60 but >=50 | II | <50 but >=40 | III | 30 | | |
| Marks | Grades | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-40 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40-50 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50-60 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 & above | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sale | Bonus | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0-30000 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30000-40000 | 3000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 40000-50000 | 4000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50000-60000 | 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60000-70000 | 6000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70000-80000 | 7000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80000 & above | 8000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AVERAGE | GRADE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| >=60 | I | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <60 but >=50 | II | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <50 but >=40 | III | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | |
|------|------|------|---------|--------|-------|
| ROLL | SUB1 | SUB2 | AVERAGE | RESULT | GRADE |
| ARUN | 50 | 60 | 55 | PASSED | II |

4. The following worksheet contains Name & Sales of 10 salesmen .

| | | |
|------|-------|------------|
| NAME | SALE | COMMISSION |
| BABY | 20000 | |

Calculate commission (using nested IF statements) as per the following:

| | |
|--------------|------------|
| Sales | Commission |
| First 30,000 | 5% |
| Next 40,000 | 10% |
| Above 70,000 | 15% |

| | | |
|------|-------|------------|
| NAME | SALE | COMMISSION |
| BABY | 20000 | 1000 |

5. The following worksheet contains Name & Taxable Income for 50 employees .

| | | | |
|------|----------------|------------|----------|
| NAME | TAXABLE INCOME | INCOME TAX | |
| | | SURCHARGE | TOTALTAX |
| RAVI | 300000 | | |
| MARY | 600000 | | |

Calculate Income Tax Surcharge and Total Tax.

Income Tax is calculated as follows :

| | |
|----------------|-----|
| First 1,50,000 | Nil |
| Next 1,00,000 | 10% |
| Next 75,000 | 20% |
| Above 3,25,000 | 30% |

Surcharge is 3% on Income Tax if Taxable income is above 5,00,000

| | | | |
|------|----------------|------------|----------|
| NAME | TAXABLE INCOME | INCOME TAX | |
| | | SURCHARGE | TOTALTAX |
| RAVI | 300000 | 20000 0 | 20000 |
| MARY | 600000 | 107500 | 3225 |
| | | 110725 | |

6. Enter data in a worksheet as shown below:

| | A | B | C | D | E |
|----|----------|--------|-------|----------|------|
| 1 | NAME | GENDER | CLASS | CATEGORY | FEES |
| 2 | Deep | M | FY | Open | 3000 |
| 3 | Jayesh | M | SY | Reserved | 1000 |
| 4 | Yash | M | TY | Reserved | 1000 |
| 5 | Sara | F | FY | Reserved | 500 |
| 6 | Gita | F | FY | Open | 3000 |
| 7 | Jinal | F | TY | Open | 5000 |
| 8 | Kavita | F | SY | Open | 4000 |
| 9 | Minal | F | SY | Reserved | 1000 |
| 10 | Karan | M | TY | Reserved | 1000 |
| 11 | Abhay | M | TY | Open | 5000 |
| 12 | Bina | F | FY | Open | 3000 |
| 13 | Seema | F | FY | Reserved | 500 |
| 14 | Naresh | M | FY | Reserved | 500 |
| 15 | Rima | F | TY | Open | 5000 |
| 16 | Gajendra | M | SY | Open | 4000 |

Filter the worksheet to show

- Female students from Reserved category
- Male students from TY
- Open category students paying fees > 3000

7. Create a worksheet with the following data:

| SLNO | REGNO | NAME | AGE |
|------|-------|--------|-----|
| 1 | 1785 | ARUN | 20 |
| 2 | 1784 | MARY | 23 |
| 3 | 1781 | SURESH | 21 |
| 4 | 1783 | ZAVIER | 18 |
| 5 | 1782 | ARUN | 22 |

Sort the table data in the following ways:

- Sort in the ascending order of REGNO
- Sort in the alphabetical order of NAME
- Sort in alphabetical order of NAME and by descending order of AGE (two students with the same name ARUN should be sorted as
ARUN 22
ARUN 20
(with **same names ARUN they were sorted by descending order of AGE**)
- Sort the data back to original order using SLNO column

8. Create a worksheet for sales of products by salesman in different cities as given below:

| Salesman code | Salesman Name | City | PRODUCT CODE | PRODUCT NAME | QUALITY | SALE AMOUNT |
|------------------|------------------|---------|-----------------|-----------------|---------|----------------|
| 1021 | ARUN | TRICHY | 13071 | TV | 1 | 22000 |
| 1022 | BALU | TRICHY | 13088 | FRIDGE | 1 | 16000 |
| 1018 | MARY | CHENNAI | 13090 | W MACHINE | 1 | 23000 |
| 1021 | ARUN | CHENNAI | 13071 | TV | 1 | 22000 |

Add data for 5 different CITIES (DELHI, BOMBAY, TRICHY,

| | <p>CHENNAI, MADURAI) 5 salesmen and 5 different products TV, FFRIDGE, WASHING MACHINE, GRINDER and MIXIE. Consolidate the data in the following ways:</p> <p>a) Find salesman wise total quantity and sales amount.</p> <p>b) Find product wise total quantity and sales amount.</p> <p>c) Find city wise total quantity and sales amount.</p> <p>9. Create a worksheet with student data REGNO, NAME, marks in 5 different subject. Find total marks. Create bar chart showing each subject mark and total mark for each student. Find subjectwise maximum and minimum marks scored by students.</p> <p>10. Create a worksheet showing votes polled by 4 political parties in 3 constituencies. Create PIE exploded PIE charts for each constituency showing votes polled by different parties in that constituency.</p> <p>11. Create a line chart showing employees age in the X axis and their income in Y axis. Display Legend and data labels with background grid lines.</p> <p>12. Enter the following data once, as shown below:</p> <p>Sell Price Cost Price Profit</p> <p>120 90 30</p> <p>Create a pivot table showing Selling prices in rows and Cost Price in Columns. Generate profits as pivot table entries. Refer the formula entered once in a cell to find the profit. Fill up the entire pivot table with command.</p> <table><tr><th></th><th colspan="6">COST PRICE</th></tr><tr><th></th><th>70</th><th>80</th><th>90</th><th>100</th><th>110</th><th>120</th></tr><tr><td>60</td><td>-10</td><td>-20</td><td>-30</td><td>-40</td><td>-50</td><td>-70</td></tr><tr><td>70</td><td>0</td><td>-10</td><td>-20</td><td>-30</td><td>-40</td><td>-50</td></tr><tr><td>80</td><td>10</td><td>0</td><td>-10</td><td>-20</td><td>-30</td><td>-40</td></tr><tr><td>90</td><td>20</td><td>10</td><td>0</td><td>-10</td><td>-20</td><td>-30</td></tr><tr><td>100</td><td>30</td><td>20</td><td>10</td><td>0</td><td>-10</td><td>-20</td></tr><tr><td>110</td><td>40</td><td>30</td><td>20</td><td>10</td><td>0</td><td>-10</td></tr><tr><td>120</td><td>50</td><td>40</td><td>30</td><td>20</td><td>10</td><td>0</td></tr></table> <p>↑Sale Price</p> | | COST PRICE | | | | | | | 70 | 80 | 90 | 100 | 110 | 120 | 60 | -10 | -20 | -30 | -40 | -50 | -70 | 70 | 0 | -10 | -20 | -30 | -40 | -50 | 80 | 10 | 0 | -10 | -20 | -30 | -40 | 90 | 20 | 10 | 0 | -10 | -20 | -30 | 100 | 30 | 20 | 10 | 0 | -10 | -20 | 110 | 40 | 30 | 20 | 10 | 0 | -10 | 120 | 50 | 40 | 30 | 20 | 10 | 0 | |
|-----|---|--------------------------|------------|-----|-----|-----|--|--|--|----|----|----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|---|-----|-----|-----|-----|-----|----|----|---|-----|-----|-----|-----|----|----|----|---|-----|-----|-----|-----|----|----|----|---|-----|-----|-----|----|----|----|----|---|-----|-----|----|----|----|----|----|---|--|
| | COST PRICE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 70 | 80 | 90 | 100 | 110 | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | -10 | -20 | -30 | -40 | -50 | -70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | 0 | -10 | -20 | -30 | -40 | -50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 | 10 | 0 | -10 | -20 | -30 | -40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 | 20 | 10 | 0 | -10 | -20 | -30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | 30 | 20 | 10 | 0 | -10 | -20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 | 40 | 30 | 20 | 10 | 0 | -10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | 50 | 40 | 30 | 20 | 10 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Total | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Course Outcomes | Programme Outcome | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CO | On completion of this course, students will | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | be able to create worksheets to compute formulae automatically by copying | PO1,PO3,PO5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | be able to perform data sorting and filtering | PO2,PO3,PO6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | be able to perform What-If analysis with pivot tables. | PO3,PO4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | be able to employ built-in functions for effective computations | PO4,PO5,PO6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | be able to present data in the form of charts and share with other packages | PO4,PO6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Web Resources | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | https://www.w3schools.com/EXCEL/index.php | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | https://www.geeksforgeeks.org/excel-tutorial/ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | https://www.tutorialspoint.com/excel/index.htm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | https://www.javatpoint.com/advanced-excel-tutorial-how-to-master-microsoft-excel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Mapping with Programme Outcomes:

| CO/PSO | PSO 1 | | PSO 2 | PSO 3 | PSO 4 | PSO 5 | PSO 6 |
|---|--------------|--|--------------|--------------|--------------|--------------|--------------|
| CO 1 | 3 | | 3 | 3 | 3 | 3 | 3 |
| CO 2 | 2 | | 3 | 3 | 3 | 3 | 3 |
| CO 3 | 3 | | 3 | 2 | 3 | 3 | 2 |
| CO 4 | 3 | | 3 | 3 | 3 | 3 | 3 |
| CO 5 | 3 | | 3 | 3 | 3 | 3 | 3 |
| Weight age of course contributed to each PSO | 14 | | 15 | 14 | 15 | 15 | 14 |

S-Strong-3 M-Medium-2 L-Low-1