IT WORKSHOP

OBJECTIVES:

The course should enable the students to:

I.   Understand the fundamental concepts of computer networking.
II. Use the preamble of LaTeX file to define document class and layout options.
III. Use LaTeX and various templates acquired from the course to compose Mathematical documents, presentations, and reports.
IV. Understand web design concepts.

COURSE OUTCOMES (COs):

1. Implement interactive web page(s) using HTML, CSS and JavaScript.
2. Design a responsive web site using HTML5 and CSS3.
3. Build Dynamic web site using server side PHP Programming and Database connectivity.
4. Illustrate various IT web services for betterment of knowledge.

COURSE LEARNING OUTCOMES (CLOs):

1. Explain and use TeX and LaTeX.
2. Installation and usage of MikTeX.
3. Installs MikTeX on Windows operating systems.
4. Use basic components of MiKTeX such as package manager, update manager, etc.
5. Explains how to obtain LaTeX.
6. Write mathematical documents via LaTeX.
7. Lists LaTeX Editors.
8. Write documents containing mathematical formulas.
9. Type mathematical symbols in paragraphs.
10. Types equations and formulas.
11. Writes mathematical symbols.
12. Labels and refers the equations.
13. Writes articles in different journal styles.
14. Explains the basic structures of an article..
15. Draw graphs and figures in LaTeX.
16. Includes graphic files into LaTeX documents.
17. Custimize LaTeX documents.
18. Prepare presentation using LaTeX.

LISTS OF EXPERIMENTS

WEEK-1	**LaTeX FORMATTING**

Introduction of LaTex and LateX document formatting:
Create a LaTeX document with following formatting: All margins with 1.5, headings with bold, text with normal, chapter name with blue color, line space with 1.5.

WEEK-2	**TECHNICAL PAPER PREPARATION IN LaTeX**

Essential steps in writing the technical report:
Create a technical report according to IEEE format includes title of the paper, authors name and affiliations, abstract and keywords, introduction section, background section, and other sections, references.

WEEK-3	**FORMATTING MATHEMATICAL EQUATIONS IN LaTeX**

Create a LaTeX document with following mathematical equations along with equation numbers in Italic format: summation (represent in sigma symbol), integration, integral of summation, average of summation, trigonometric equations, polynomial and non-polynomial equations

WEEK-4	**GRAPHICS AND TABLES IN LaTeX**

Create a LaTeX documents with images and image caption at centre alignment, table with thick border and table caption with centre alignment, row height, content with cell centre alignment.

WEEK-5	**VARIOUS FORMATTING STYLES IN LaTeX**

Using LaTeX to create project certificate. Features to be covered:- Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in both LaTeX.

WEEK-6	**EXCEL SPREADSHEETS**

Spreadsheet Orientation: Accessing, overview of toolbars, saving spreadsheet files, Using help and resources. Creating a Scheduler:- Gridlines, Format Cells, Summation, auto fill, Formatting Text
Calculating GPA - Features to be covered:- Cell Referencing, Formulae in spreadsheet – average, std. deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, Sorting, Conditional formatting.

WEEK-7	**PREPARATION OF POWERPOINT PRESENTATION IN LaTeX**

Student should work on basic power point utilities and tools in Latex which help them create basic power point presentation. PPT Orientation, Slide Layouts, Inserting Text,   Formatting   Text, Bullets and Numbering, Auto Shapes, Lines and Arrows

WEEK-8	**WEBPAGES CREATION AND DESIGNING**

HTML, creating simple web pages, images and links, design of web pages.
Develop home page: Student should learn to develop his/her home page using HTML consisting of his/her photo, name, address and education details as a table and his/her skill set as a list.

WEEK-9	**WEB DESIGN FOR SAMPLE PROJECT**

Create a webpage with HTML describing your department. Use paragraph and list tags.
Apply various colors to suitably distinguish key words. Also apply font styling like italics, underline and two other fonts to words you find appropriate. Also use header tags.
Create links on the words e.g. "Wi-Fi" and "LAN" to link them to Wikipedia pages. Insert an image and create a link such that clicking on image takes user to other page. Change the background color of the page.
At the bottom create a link to take user to the top of the page.

WEEK-10	**NETWORK CONNECTIVITY**

Students should get connected to their Local Area Network and access the Internet. In the process they configure the TCP/IP setting. Finally students should demonstrate how to access the websites and email.

WEEK-11	**SURFING THE WEB**

Web Browsers, Surfing the Web: Students customize their web browsers with the LAN proxy settings, bookmarks, search toolbars and pop up blockers.

WEEK-12	**ROUTER CONFIGURATION**

Cabling a network using CCNA, basic and challenge router configuration, subnetting, practical test router connections and settings, troubleshooting challenges.

REFERENCE BOOKS:

1	Introduction to Information Technology, ITL Education Solutions limited, Pearson Education India, 2005
2	LaTeX Companion – Leslie Lamport, PHI/Pearson.
3	David Anfinson and Ken Quamme, IT Essentials: PC Hardware and Software Companion Guide, Third Edition, Cisco Press, 2008

WEB REFERENCES:

1.	https://www.latex-tutorial.com/tutorials/
2.	https://tutorial.techaltum.com/webdesigning.html

Course Home Page:

SOFTWARE AND HARDWARE REQUIREMENTS FOR A BATCH OF 24 STUDENTS:
HARDWARE: Desktop Computer Systems: 24 nos.
SOFTWARE: LaTeX