

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY  
KAKINADA**

I Year B.Tech. ECE

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**IT WORKSHOP**

**Objectives :**

The IT Workshop for engineers is a 6 training lab course spread over 90 hours. The modules include training on PC Hardware, Internet & World Wide Web and Productivity tools including Word, Excel, Power Point and Publisher.

**PC Hardware** introduces the students to a personal computer and its basic peripherals, the process of assembling a personal computer, installation of system software like MS Windows , Linux and the required device drivers. In addition hardware and software level troubleshooting process, tips and tricks would be covered.

**Internet & World Wide Web** module introduces the different ways of hooking the PC on to the internet from home and workplace and effectively usage of the internet. Usage of web browsers, email, newsgroups and discussion forums would be covered. In addition, awareness of cyber hygiene, i.e., protecting the personal computer from getting infected with the viruses, worms and other cyber attacks would be introduced.

**Productivity tools** module would enable the students in crafting professional word documents, excel spread sheets, power point presentations and personal web sites using the Microsoft suite of office tools and LaTeX.

**PC Hardware**

**Week 1 – Task 1 :** Identify the peripherals of a computer, components in a CPU and its functions. Draw the block diagram of the CPU along with the configuration of each peripheral and submit to your instructor.

**Week 2 – Task 2 :** Every student should disassemble and assemble the PC back to working condition. Lab instructors should verify the work and follow it up with a Viva. Also students need to go through the video which shows the process of assembling a PC. A video would be given as part of the course content.

**Week 3 – Task 3 :** Every student should individually install MS windows on the personal computer. Lab instructor should verify the installation and follow it up with a Viva.

**Week 4 – Task 4 :** Every student should install Linux on the computer. This computer should have windows installed. The system should be configured as dual boot with both windows and Linux. Lab instructors should verify the installation and follow it up with a Viva

**Week 5 – Task 5 :** Several mini tasks would be that covers Basic commands in Linux and Basic system administration in Linux which includes: Basic Linux commands in bash, Create hard and symbolic links, Text processing, Using wildcards

**Week 6 – Task 6 : Hardware Troubleshooting :** Students have to be given a PC which does not boot due to improper assembly or defective peripherals. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva

**Week 7 – Task 7 : Software Troubleshooting :** Students have to be given a malfunctioning CPU due to system software problems. They should identify the problem and fix it to get the computer back to working condition. The work done should be verified by the instructor and followed up with a Viva.

**Week 8 – Task 8 :** The test consists of various systems with Hardware / Software related troubles, Formatted disks without operating systems.

**Internet & World Wide Web**

**Week 9 - Task 1 : Orientation & Connectivity Boot Camp :** 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, to the instructor, how to access the websites and email. If there is no internet connectivity preparations need to be made by the instructors to simulate the WWW on the LAN.

**Week 10 - Task 2 : Web Browsers, Surfing the Web :** Students customize their web browsers with the LAN proxy settings, bookmarks, search toolbars and pop up blockers. Also, plug-ins like Macromedia Flash and JRE for applets should be configured.

**Week 11 - Task 3 : Search Engines & Netiquette :** Students should know what search engines are and how to use the search engines. A few topics would be given to the students for which they need to search on Google. This should be demonstrated to the instructors.

**Week 12 - Task 4 : Cyber Hygiene :** Students would be exposed to the various threats on the internet and would be asked to configure their computer to be safe on the internet. They need to first install an anti virus software, configure their personal firewall and windows update on their computer. Then they need to customize their browsers to block pop ups, block active x downloads to avoid viruses and/or worms.

**Week 13 Module Test** A test which simulates all of the above tasks would be crafted and given to the students.

#### **LaTeX and Word**

**Week 14 – Word Orientation :** The mentor needs to give an overview of LaTeX and Microsoft/ equivalent (FOSS) tool word : Importance of LaTeX and MS/ equivalent (FOSS) tool Word as word Processors, Details of the four tasks and features that would be covered in each, Using LaTeX and word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word.

**Task 1 : Using LaTeX and word** 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 and Word.

**Week 15 - Task 2 : Creating project abstract** Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check , Track Changes.

**Week 16 - Task 3 : Creating a Newsletter :** Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs

**Week 17 - Task 4 : Creating a Feedback form** - Features to be covered- Forms, Text Fields, Inserting objects, Mail Merge in Word.

**Week 18 - LaTeX and Word Module Test** - Replicate the given document inclusive of all features

#### **Excel**

**Week 19 - Excel Orientation :** The mentor needs to tell the importance of MS/ equivalent (FOSS) tool Excel as a Spreadsheet tool, give the details of the four tasks and features that would be covered in each. Using Excel –

Accessing, overview of toolbars, saving excel files, Using help and resources

**Task 1 : Creating a Scheduler** - Features to be covered:- Gridlines, Format Cells, Summation, auto fill, Formatting Text

**Week 20 - Task 2 : Calculating GPA** - .Features to be covered:- Cell Referencing, Formulae in excel – average, std.deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP

**Week 21 - Task 3 : Performance Analysis** - Features to be covered:- Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting

**Week 22 - Task 4 : Cricket Score Card** - Features to be covered:-Pivot Tables, Interactive Buttons, Importing Data, Data Protection, Data Validation

**Week 23 – Excel Module Test** - Replicate the given document inclusive of all features

#### **LaTeX and MS/equivalent (FOSS) tool Power Point**

**Week 24 - Task1 :** Students will be working on basic power point utilities and tools which help them create basic power point presentation. Topic covered during this week includes :- PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows in both LaTeX and Powerpoint.

**Week 25 - Task 2 :** Second week helps students in making their presentations interactive.Topic covered during this week includes : Hyperlinks, Inserting –Images, Clip Art, Audio, Video, Objects, Tables and Charts

**Week 26 - Task 3 :** Concentrating on the in and out of Microsoft power point and presentations in LaTeX. Helps them learn best practices in designing and preparing power point presentation. Topic covered during this week includes :- Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), Inserting – Background, textures, Design Templates, Hidden slides.

**Week 27 - Task 4 :** Entire week concentrates on presentation part of LaTeX and power point. Topic covered during this week includes -Using Auto content wizard, Slide Transition, Custom Animation, Auto Rehearsing

**Week 28 - Task 5 :** Power point test would be conducted. Students will be given model power point presentation which needs to be replicated (exactly how it's asked).

**Publisher**

**Week 29 :** Help students in preparing their personal website using Microsoft/ equivalent (FOSS) tool publisher. Topic covered during this week includes - Publisher Orientation, Using Templates, Layouts, Inserting text objects, Editing text objects, Inserting Tables, Working with menu objects, Inserting pages, Hyper linking, Renaming, deleting, modifying pages, Hosting website.

**REFERENCES :**

1. Comdex Information Technology course tool kit Vikas Gupta, WILEY Dreamtech
2. The Complete Computer upgrade and repair book,3rd edition Cheryl A Schmidt, WILEY Dreamtech
3. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education.
4. PC Hardware and A+Handbook – Kate J. Chase PHI (Microsoft)
5. LaTeX Companion – Leslie Lamport, PHI/Pearson.
6. All LaTeX and others related material is available at  
(a) [www.sssolutions.in](http://www.sssolutions.in) and  
(b) [www.sontisoftsolutions.org](http://www.sontisoftsolutions.org)