

## 1/4 B.Tech - SECOND SEMESTER

EC2L4

Basic Workshop

Credits: 2

Lecture : ---

Lab : 3 periods/week

Internal assessment: 25 marks

Semester end examination: 50 marks

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### Course Objectives:

- To gain experience on different trades of Engineering like Carpentry, Tin Smithy, Welding and House Wiring.
- To identify various software peripherals
- To use the productivity tools
- To practice the PC hardware and working conditions

### Learning Outcomes:

Upon completion of this course the students will be able to

- Development of jobs carried under various trades.
- Different jobs done in the lab are very useful in industry learning.
- get ability to fabricate engineering structures

### Mechanical Workshop

**Note: At least two exercises to be done from each trade.**

#### Trade:

##### Carpentry

1. T-Lap Joint
2. Cross Lap Joint
3. Dovetail Joint
4. Mortise and Tennon Joint

##### Fitting

1. Vee Fit
2. Square Fit
3. Half Round Fit
4. Dovetail Fit

##### Black Smithy

1. Round rod to Square
2. S-Hook
3. Round Rod to Flat Ring
4. Round Rod to Square headed bolt

##### House Wiring

1. Parallel / Series Connection of three bulbs
2. Stair Case wiring
3. Florescent Lamp Fitting
4. Measurement of Earth Resistance

##### Tin Smithy

1. Taper Tray
2. Square Box without lid
3. Open Scoop
4. Funnel

## **IT Workshop**

The modules include training on PC Hardware, Internet & World Wide Web and Productivity tools including (word processor, presentation s/w) Word, Power Point and Publisher.

**PC Hardware** Identification of basic peripherals, assembling a PC, installation of system software like MS Windows, Linux and the device drivers. Troubleshooting, Hardware and software.

**Productivity tools** Crafting professional word documents, power point presentations and personal web sites using the Microsoft suite of office tools and LaTeX.

### **PC Hardware**

**Exercise1:** Identification of the peripherals of a computer. To prepare a report containing the block diagram of the CPU along with the configuration of each peripheral and its functions and submit the assignment to your instructor

**Exercise 2:** A practice on disassemble the components of a PC and assembling them to working condition.

### **Exercise 3 :a) Basic DOS commands**

b) **Installation** of MS windows on a PC.lab instructor should verify the installation process

### **Exercise 4 :**

a) **Introduction to LINUX**

b) **System requirements**

c) **Installation procedure**

### **Exercise 5:**

Exposure to Basic commands and system administration in Linux including: Basic Linux commands in bash, Create hard and symbolic links.

### **Exercise 6:**

#### **Hardware Troubleshooting (Demonstration):**

Students have to be given a PC which does not boot due to improper assembly or defective peripherals. Identification of a problem and fixing it for getting to working condition.

**Software Troubleshooting (Demonstration):** Students have to be given a malfunctioning CPU due to system software problems. Identification of a problem and fixing it for getting to working condition.

### **Exercise 7:**

#### **LaTeX and Word**

#### **Explanation of window components (menu bar, tool bar, title bar)**

**Word Orientation:** Importance of LaTeX and MS/ equivalent (FOSS) tool Word as word Processors.

**Exercise 7.1: 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.

**Exercise 7.2: 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, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs.

**Note:** instructors has to explain about IEEE formats and standards

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

**Exercise 8:** 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, Hyperlinks, Inserting –Images, Clip Art, Tables and Charts in both LaTeX and PowerPoint.

### **Learning resources**

#### **References:**

1. Upgrading and Repairing PCs, Scott Mueller, QUE, 18<sup>th</sup> Edition, Pearson, 2008
2. The Complete Computer upgrade and repair book, ,Cheryl A Schmidt, 3<sup>rd</sup> Edition, Addison Wisley Publishers, 2002
3. Basic concepts of information technology workshop, G.Praven Babu, M.V.Narayana, 3<sup>rd</sup>edition ,B.S Publications,2007