ENGINEERING WORKSHOP
(Common to all Branches)

Course Code: 15MT1101

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Course Outcomes:

At the end of the course, the student will be able to

CO 1 Prepare the wooden pieces into various joints. Prepare different forms of fit on metal pieces and identify different types of patterns used for mould preparations providing necessary allowances.

CO 2 Identify different tin-smithy tools for the preparation of models by sheet form various metals and discuss the types of switching operations used in house wiring application.

CO 3 Identify the peripherals of a computer, components in CPU and its functionalities.

CO 4 Install windows operating systems, learn MS-DOS commands, and work with MS-Office tools

CO 5 Set TCP/IP and LAN Connectivity and work with various search engine techniques

LIST OF EXPERIMENTS

Any six experiments from each module

MODULE – 1

1. Carpentry: Making a Cross-half lap joint using wooden pieces.
2. Fitting: Preparation of a V-fit between flat mild steel pieces.
3. Foundry: Preparation of a sand mould using a single piece pattern.
4. Tin-Smithy: Preparation of a sheet metal funnel using tin-smithy tools.

5. House Wiring: One lamp controlled by a one-way switch.

6. House Wiring: Two-way switching for stair-case lamp.

EXPERIMENTS TO BE DEMONSTRATED

1. **Lathe Machine:** Demonstration of turning related activities on Lathe machine.

2. **Drilling Machine:** Demonstration of drilling related activities on Drilling machine.

Module – 2

EXERCISE - 1

1. **Identify the peripherals of a computer -** Identification of the components in a CPU and its functions - Block diagram of the CPU along with the connectivity of the main components.

2. **Assembling and disassembling the system -** configuration of each peripheral. Disassembly and assembly of a personal computer.

EXERCISE-2

1. **Install windows XP operating system -** Installation of MS windows XP on the personal computer.

2. **MSDOS commands: -** Basic operations that can be performed through MS DOS commands.

EXERCISE-3

MS OFFICE TOOLS:

MICROSOFT WORD:-

1. **Creation of project certificate:** Exposure to features like 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.

2. **Creating project abstract:** Features to be covered are Formatting Styles, Inserting table, Bullets and Numbering.

Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check, Track Changes.

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

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

EXERCISE-4

MICROSOFT POWERPOINT:-

1. Exposure to basic power point utilities and tools (PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering.

2. Auto Shapes, Lines and Arrows in both LaTeX and Power point, Hyperlinks, inserting Images, Clip Art, Audio, Video, Objects, Tables, Charts) to create basic power point presentation.

EXERCISE-5

MICROSOFT EXCEL:-

1. **Introduction of Excel** as a Spreadsheet tool, Using Excel – Accessing, overview of toolbars, saving excel files, Using help and resources.

2. **Creating a Scheduler** - Features to be covered are Gridlines, Format Cells, Summation, auto fill, Formatting Text.

3. **Calculating GPA** - Features to be covered are Cell Referencing, Formulae in excel – average, standard deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP.

EXERCISE-6

1. **Search engines and netiquette** - Basic points of search engines, Search engines working procedure (Web crawling, Indexing, and Searching).

2. **Connectivity -** Connectivity to the Local Area Network and accessibility to the Internet. TCP / IP setting

EXPERIMENTS TO BE DEMONSTRATED

1. **Install Linux operating system:** Installation of LINUX on the personal computer.
2. **Hardware & Software troubleshooting:**
   - ✤ Identification of the problem of a PC which does not boot (due to improper assembly or defective peripherals) and fixing it to get the computer back to working condition.
   - ✤ Identification of the problem of a malfunctioning (due to some system software problems) and fixing it to get the computer back to working condition.

TEXT BOOKS:

1. P. Kannaiah and K.L. Narayana, *"Workshop Manual"*, 11th Reprint, Scitech publications, October 2010.
2. Vikas Gupta, *"Comdex Information Technology Course tool kit"*, 1st Edition, WILEY Dreamtech, 2010.

REFERENCES:

1. Cherly A Schmidt, *"Complete computer upgrade and Repair book"*, 3rd Edition, Wiley Dreamtech, 2012.
2. ITL Education Solutions limited, *"Introduction to Information Technology"*, 2nd Edition Pearson Education, 2011.
3. Kate J. Chase , *" PC Hardware and A + Handbook"* , 1st Edition, PHI(Microsoft), 2012.
4. Leslie Lamport , "Latex Companion", 1st Edition , PHI / Pearson, 2011.
5. Alexis Leon and Mathews Leon , *"Introduction to Computers with MS-Office 2000"*, 1st Edition, Leon Tech world, 2011.