

22EE102 IT WORKSHOP AND ELECTRICAL ENGINEERING PRODUCTS

Hours Per Week :

L	T	P	C
1	0	4	3



sOURCE : <https://bright-industry.com/electrical-engineering>

PREREQUISITE KNOWLEDGE: Basics of Computer and Physics.

COURSE DESCRIPTION AND OBJECTIVES:

This course deals with different IT tools, Mechanical trades and Electrical engineering basics. The objective of this course is giving hands on practice on assembling and disassembling, productivity tools like Latex, word, spreadsheets and presentations and to develop models using Carpentry, Fitting, Tinsmith, House wiring, Electrical power generation, protection of equipment's and applications of motors.

MODULE - 1

UNIT-1

4L+0T+16P=20 Hours.

COMPUTER HARDWARE AND TOOLS FOR REPORT WRITING AND PRESENTATION:

Computer Hardware: peripherals of a computer, components in a CPU and its functions, block diagram of the CPU.

Tools for Report writing and Presentation: Overview and Installation of Microsoft Word, Excel and PowerPoint Presentation.

UNIT-2

4L+0T+16P=20 Hours.

COMPUTER HARDWARE AND TOOLS FOR REPORT WRITING AND PRESENTATION:

Computer Hardware: Disassemble and Assemble the PC back to working condition.

Tools for Report writing and Presentation: Creating project, creating a Newsletter using Microsoft Word and LaTeX.

Creating a Scheduler, Calculating GPA, Performance Analysis, Conditional Formatting, Charts and Pivot Tables using MS Excel; Power Point utilities and tools, Master Layouts, Design Templates, Background and textures using Power Point Presentation.

PRACTICES

- Troubleshooting of a computer Hardware.
- Assembly and Disassembly of a Computer.
- Creation of projects and Newsletter using MS Word and LaTeX.
- Spreadsheet basics, modifying worksheets, formatting cells, formulas and functions, sorting and filtering, charts using MS Excel.
- Power point screen, working with slides, add content, work with text, working with tables, graphics, slide animation, reordering slides, adding sound to a presentation using MS PPT.

MODULE - 2

UNIT-1

4L+0T+16P=20 Hours.

ENGINEERING MATERIALS AND TRADES:

Engineering Materials: Introduction, Classification, Ferrous & non-ferrous metals and alloys.

Trades: Introduction and Materials used in Carpentry, Fitting, Tin smithy and House Wiring. Cutting Tools, Holding Tools, Marking Tools used and types of joints made in Carpentry, Fitting, Tin smithy and House Wiring.

SKILLS:

- ✓ Design and develop various sheet metal products.
- ✓ Analyse the functioning & troubleshoots of household appliances.
- ✓ Create products by using different trades for Industrial applications.
- ✓ Analyse the electrical power generation.

UNIT-2**4L+0T+16P=20 Hours.****PROTECTION SCHEMES, GENERATING STATIONS AND MOTOR:****Protection schemes:** Earthing procedure, Switch fuse unit (SFU), MCB.**Generating stations:** Thermal power station and Wind power station.**Motor:** Motors used in domestic applications, Mixer grinder, Ceiling fan, Washing machine, Air coolers, and Electric vehicle.**PRACTICES**

- Fabrication of T-lap joint using carpentry tools.
- Fabrication of V-fit using fitting tools.
- Fabrication of truncated cylinder using tin smith tools.
- Performance of 1 lamp controlled by one way switch using house wiring.
- Performance of 2 lamp controlled by one way switch using house wiring.
- Demonstration of plate earthing.
- Demonstration of pipe earthing.
- Demonstration of mixer grinder.
- Demonstration of washing machine.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Assemble and disassemble of a computer	Apply	1	1, 2
2	Create documents, spread sheets and presentations using LaTeX and MS Tools	Apply	1	1, 2, 5, 6, 12
3	Develop methodology for fabrication as per specifications of the product.	AnalyZe	2	1, 3, 8, 9, 10
4	Analyse the protection technics in sub study industries.	Analyze	2	1, 6, 7

TEXT BOOKS:

1. Peter Norton, "Introduction to Computers", Tata Mc Graw Hill Publishers, 7th Edition, 2017.
2. Felix W "Basic Workshop Technology: Manufacturing Process", 1st Edition, 2019.

REFERENCES:

1. T.V.Gopal, T.Kumar and G. Murali, "A first Course on Workshop Practice: Theory, Practice and Work Book", Suma Publication, 2005.
2. K.V.N.Pakirappa, "Workshop Technology", 5 th edition, Radiant Publishing House, 2011.
3. S.K Hazra Choudhury, "Elements of Work Shop Technology", 11th edition, Media Promoters, 1997.
4. C.L. Wadhwa, "Electrical Power Systems", 5th edition, New Age International, 2009.
5. V. K mehta and Rohit mehta "Principles of Power System", 1st Edition, S. Chand, 2005.