



Subject Code: 01CT0104

Subject Name: ICT Workshop

B. Tech. Year – I (Semester I)

Objective:

This course deals with basic introduction of system components of electronic systems, and provides hands on practice in assembling, interconnecting, testing, and repairing such system by making use of various tools. Also, this course will provide a much needed knowledge of computer hardware and networking, enabling them to identify and rectify the onboard computer hardware, software and network related problems. With the help of this course the student will be able to understand the hardware specifications that are required to run operating system and various application programs.

Credits Earned: 01 Credit

Course Outcomes: After completion of this course, student will be able to:

1. Understand Basic Electronic components and tools.
2. Understand Basic Computer components and tools.
3. The students will apply knowledge of engineering to design and conduct experiments using PCB design software.
4. Identify the existing configuration of the computers and peripherals.
5. Apply their knowledge about computer peripherals to identify / rectify problems onboard.
6. Integrate the PCs into local area network and re-install operating system and various application programs.

Pre-requisite of course: NA

Teaching and Examination Scheme:

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial / Practical Marks		Total Marks
				E	I		V	T	
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term Work	
0	0	2	1	00	00	00	25	25	50



Contents:

Unit	Topics	Contact Hours
1	Introduction to Basics of Electronic Components and Instruments Study of electronic components- active & passive, Electronic Instruments: CRO, Function generator, Power Supply, Multi-meter, IC tester. Solder practice	4
2	Introduction to Computer Components Basics of computer modules, Understanding the input-Output devices, Understanding the primary and Secondary Storage Memory, Understanding the functionality of ALU	2
3	Assembling a PC Assembling various computer parts like Processor (CPU), Computer Case, Optical Drives, Memory, Power Supply, Motherboard, Processor Fan, Case Fan	2
4	Introduction to various network components Understanding Network Components like Routers, Hubs, Switch, Bridge, Gateways, NICs, Wireless Access Points, Modems	2
5	PCB Design Process Conception Level Introduction: Specifying Parts, Packages and Pin Names, Libraries and Checking foot prints of the components, Partlist, Placing Parts, Routing Traces, Modifying Traces, Mounting Holes, Adding Text, PCB Layout, Pattern Transfer.	6
6	Installation of operating system Introduction to Operating systems, Step wise process to install Operating Systems	2
7	Establishment of local area network and implementation of file sharing on network Understanding basic Network Topologies, Cramping of LAN, Setting up connections between PCs, File Transferring and Sharing	4
Total Hours		22

Suggested Theory distribution:

The suggested theory distribution as per Bloom’s taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process.

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
10%	15%	20%	20%	15%	20%



Open Ended Projects:

1. Identify the hardware and software list of the given system.
2. Install and uninstall given software step-by-step.
3. Explain step-by-step installation process for given operating system.
4. Designing single layer PCB and understanding Double layer PCB.