

**Subject Code: 01CE1102**

**Subject Name: Computer Workshop**

**B.Tech. Year -I**

**Objective:** Students of Computer Engineering have to work with various hardware and software not only during academia but also in company. Thus, students should get familiar with various hardware, software, operating systems and networking.

This course will provide student 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: 1 Credits**

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

- Understand the basic concept and structure of computer hardware and networking.
- Identify the existing configuration of the computers and peripherals.
- Integrate and use of Google Apps in their workflow.
- Prepare Project Reports and write official documents.
- Prepare Worksheets with Calculations, References, Charts.
- Prepare Presentations

**Pre-requisite of course: NA**

**Teaching and Examination Scheme**

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

**Content:**

Unit	Topics	Contact Hours
1	<p><b>Assembly of Computer And Operating Systems:</b>            Introduction to hardware peripherals like RAM, ROM, keyboard, Mouse, processors, etc. Generation of processors. Working of SMPS. Study of various ports. Steps and precautions to assemble computer.            Introduction to software and types of software, operating systems and types of operating systems (windows, Linux, Mac). Case study of installation steps of operating system and application software.</p>	6
2	<p><b>Internet and Google Suite:</b>  <b>Internet:</b> Introduction to internet. Study of various internet based services like Email, social network, chat, etc. Introduction to cyber security and cyber laws.  <b>Gmail:</b> compose mails and drafts, create labels, folders and filters,  <b>Google Calendar:</b> create events, separate calendars,  <b>Drive:</b> maintain documents and files and folders, share content with others,  <b>Docs, Sheets, Slides, Sites,</b>  <b>Forms:</b> create online forms and gather data/survey,  <b>Keep:</b> create notes and maintain notes,  <b>Classroom:</b> Join classroom, understand stream page and assignments, upload assignments.</p>	6
3	<p><b>Office Suite:</b>  <b>Word:</b> Getting Started with Word, Paragraph Formatting, Managing Lists, Tables, Styles, Page Setup Options, Controlling Page Appearance, Sectioning, Graphics, Envelopes and Labels, Mail Merges, Indexing and Table of Contents, Review and Printing.  <b>Excel:</b> Introduction, Creating Workbooks, Page Setup &amp; Print Options, Working with Rows, Columns and Cells, Formulas &amp; Functions, Working with Sheets, Formatting Worksheets, Charts, Sorting and Filtering, Pivot Tables, Shortcuts.  <b>PowerPoint:</b> Getting Started, Text and Bullet Editing Options, Working with Graphics, objects, SmartArt, Tables, Charts, Hyperlinks and Action Buttons, Working with Transitions and Animations, Slideshow Options, Unlocking the Power of Masters.</p>	12
	<b>Total Hours</b>	<b>28</b>

**Reference Books:**

1. Hardware Bible by Winn L. Rosch
2. Hardware and Software of Personal Computers by Sanjay K. Bose
3. Fundamentals of Computers by V. Rajaraman
4. Computer Studies - A first course by John Shelley and Roger Hunt
5. Computer Fundamentals, MS Office and Internet & WebTechnology by Dinesh Maidasani
6. Modern Computer Hardware Course by M Lotia, P Nair, P Lotia

**List of Experiments:**

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills so that students are able to acquire the competency.

Following is the list of experiments for guidance.

1. Create Gmail filters to manage various emails from inbox.
2. Create a separate calendar and add an event with attendees.
3. Create/upload files/folders to google drive and share it with your friend.
4. Create a google document shared with friend to prepare a report on hardware of computer system.
5. Create a google slide presentation shared with friend to present different software of computer system.
6. Create a google spreadsheet shared with friend to prepare a quotation of computer system with different configuration.
7. Create a google site for your own portfolio.
8. Create a google form for survey on recent technology trends.
9. Create a word document to prepare a report on hardware of computer system with title page, table of content and proper formatting.
10. Create a presentation file to present recent technology trends.
11. Create a spreadsheet of findings of survey on recent technology trends and generate graphs.

**Suggested List of Student Activities:**

1. Collect various types of computer hardware and prepare summary report
2. Collect various types of computer software and prepare requirement report
3. Collect specifications of similar types of hardware and software and prepare report comparing them.
4. Assemble one computer and install operating system and several software (mini – project given by faculty member)

**Open Ended Problems:** Apart from above experiments a group of students has to undertake open ended problem/design problem. Few examples of the same are given below.

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. Prepare the report of need of programming language in 21<sup>st</sup> century.

**Major Equipment:****Components:**

Various types of hardware including RAM, motherboards, Processor, hard disk, etc. along with various operating system like linux and windows based with software like open office, players etc.

**Tools:**

Screw driver, crimping, soldering iron, multi-meter, cable tester, UTP cable, Connectors, keyboard, mouse, and other USB devices.

**Supplementary Resources:**

1. <http://nptel.ac.in/courses/106105084/>
2. <https://www.coursera.org/learn/internet-history>
3. <http://windows.microsoft.com/en-US/windows7/Create-a-system-repair-disc>
4. <https://www.coursera.org/learn/getting-started-with-google-sheets>
5. <https://www.coursera.org/learn/introduction-to-computers-and-office-productivity-software>