Title of Subject **:Introduction to Information & Communication Technologies (SW-113)**

Discipline : Software Engineering (1st Semester)

Effective : 19SW & onwards

Pre-requisite : None

Assessment **:** Theory**:** 20% Sessional, 80% Written Semester Examination

## (20% Mid, 60% Final)

Practical: 40% Sessional, 60% Final Examination

Credit Hours : 02 + 01 Marks: 50 + 50

Minimum Contact Hours: 30 + 45

# Specific Objectives of course:

* The have an understanding of fundamental terms and concepts associated with ICT.
* To acquire hands-on experience in using some essential ICT tools, such as MS Word/Excel/PowerPoint, Web Browser, E-mail Client, etc.

# Course Learning Outcomes (CLOs):

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| --- | --- | --- | --- |
| CLO | Description | Taxonomy Level | PLO |
| 1 | Understand and Identify the various components and concepts related to ICT | C2 | 1 |
| 2 | Use ICT to solve real world problems. | C3 | 2 |
| 3 | Use necessary software for supporting, everyday usage of Computer and Communication Systems. | P2 | 5 |

**PROGRAM LEARNING OUTCOMES (PLOs):**

The course is designed so that students will achieve the following PLOs:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | Engineering Knowledge: | ☑ | 7 | Environment and Sustainability: | ☐ |
| 2 | Problem Analysis: | ☑ | 8 | Ethics: | ☐ |
| 3 | Design/Development of Solutions: | ☐ | 9 | Individual and Team Work: | ☐ |
| 4 | Investigation: | ☐ | 10 | Communication: | ☐ |
| 5 | Modern Tool Usage: | ☑ | 11 | Project Management: | ☐ |
| 6 | The Engineer and Society: | ☐ | 12 | Lifelong Learning: | ☐ |

# Course outline:

* **COMPUTER SYSTEMS**

Types of Computers, Parts of computers, hardware, input/output devices, storage devices, software, system software, operating systems, application software, computer users, graphical user interface, interacting with your computer, Interpreter and Compilers.

* **DATA PROCESSING AND STORAGE**

Data representation, bit and bytes, text codes, data processing, CPU, machine cycles, internal clock, factors affecting processing speed, modern CPU, parallel processing, organization and identification of data, backing up data, optimizing disk performance, files and databases

* **WORKING WITH COMPUTER LOGIC**

Number Systems, Decimal, Binary, Octal, Hexadecimal, Binary Addition, Multiplication and Division, Boolean algebra Concepts, Electronic logic gates, Truth table, Canonical forms, Karnaugh maps, Quine Mc-Clusky methods, Introduction to combinational logic design.

* **IMPACT OF ICT ON SOCIETY**

How ICT effects the society, applications in education sector, finance, business, home, etc. Advantages and Disadvantages.

# Practical Work to be carried out:

|  |
| --- |
| Understanding your operating system and troubleshooting basic problemsEfficiently using Internet and Search EnginesGetting familiar with MS WordWorking with Advanced features of MS WordTechnical Writing with MS WordWorking with MS PowerPointEnhancing presentations using animations and business modelsGetting familiar with MS ExcelWorking with formulae and functions in MS ExcelUsing a sophisticated text editor for programmingGetting familiar with Git and GitHubTeam Collaboration using a Remote Access SoftwareCreating Google FormsGetting familiar with basic HTML Syntax  1. Case Study |

# Recommended Books:

* Peter Norton, Introduction to computers, Latest Edition.
* Brian K. Williams, Stacey C. Sawyer, Using information technology : a practical introduction to computers & communications, Latest Edition

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| **Approval:** |  | |
| **Board of Studies:** | **Resolution No. 02** | **Dated: 29-08-2019** |
| **Board of Faculty:** | **Resolution No. 01** | **Dated: 07-10-2019** |
| **Academic Council:** | **Resolution No. 96.10** | **Dated: 07-10-2019** |