CLUSTER UNIVERSITY SRINAGAR
SYLLABUS (FYUP UNDER NEP 2020)
Offered By Department Of ELECTRONICS
Semester 1st Skill Enhancement Course (SEC)

Course Title: Computing and Informatics-I

Course Code: UGELT22S102   **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3)   **Theory External: 15; Min Marks: 06**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Theory Internal (Continuous Assessment): 10 Marks, Min Marks: 04**
                                                  Practical Experimental Basis= 45 Marks, Min. Marks: 18
                                                  Practical Internal (Continuous Assessment): 30 Marks, Min. Marks: 12

Course Objectives:
- To understand the basics of computers and different blocks in it.
- Fundamentals of Digital Electronics and Binary world.
- To understand the design and construction of the basic and universal logic gates.
- To understand the design and construction of various flip-flops.

Course Outcomes:
After the completion of the course the student will be able to have:
- General idea of a Computer System; Hardware and Software.
- Introduction to Digital world
- Design and Implementation of logic gates and Flip Flops.

Unit-I:
Introduction to Computer and Digital Electronics
Computer Basics, History, generation and classification of Computers. Hardware: Components of a Computer, input/output devices, CPU unit and Memory unit, Secondary Storage. Software: System Software, Application Software. Introduction to Digital Electronics: Number systems, Decimal, Binary, Octal and Hexadecimal number system. Decimal-Binary Conversion, Truth Tables of various Logic Gates and Flip Flops.

Unit-II:
Parts of Computer System
Identification of various internal and external parts of computer system: Processor, Motherboard,Hard Drive, RAM, ROM, Computer Keyboard and, Memory, Control Unit, Compact Disk, Floppy Disk etc.

Unit-III:
Design and Implementation of Logic Gates
- OR Gate
- AND Gate
- NOT Gate
- NOR Gate
- NAND Gate
- XOR Gate
- XNOR Gate

Unit IV:
Design and Implementation of Flip Flops
- SR (Set-Reset) Flip Flop
- JK Flip Flop
- D (Delay) Flip Flop
- T (Toggle) Flip Flop

Books Recommended:

1. V. Srivastava "Computing and Informatics" Ist Edition S. K. Kataria & Sons.
2. Chandwani "Computing and Informatics" Jain Brothers.
3. AnitalGoel "Computer Fundamentals" Pearson.
4. P. K. Sinha "Computer Fundamentals" BPB Publications.
5. Digital Principles and Applications, A. P. Malvino, D. P. Leach and Saha, 7th edition,2011, Tata McGrew
6. Fundamentals of Digital Circuits, Anand Kumar, 2nd Edition, 2009, PHI Learning Pvt.Ltd.
7. R. L. Tokheim, Digital Principles, Schaum's Outline Series, Tata McGrew Hill.