Semester-wise Revised Syllabus under CBCS, 2021
-22
Domain Subject: **ELECTRONICS**
IV Year B.Sc., - Semester – V

Course 6C: VLSI DESIGN

(Skill Enhancement Course (Elective), 3+2 Credits)
Max. Marks: Theory:100 + Practical:50

UNIT-I (12 hrs)

Integrated Circuit- Definition, Classification' s, and Advantages of IC' s – MOS Transistors: Enhancement type, Depletion type, Modes of NMOS – CMOS, Fabrications: n-Well, p-Well.

UNIT-II (12 hrs)

NMOS Inverter – CMOS inverter – VLSI Design Flow: Design Specification' s Design Entry – Examples of (Circuit Diagrams only) NMOS, PMOS and CMOS.

UNIT-III (12 hrs)

Basic logic gates in CMOS – Complex logic gate: Two, Three inputs of CMOS NAND gate – Combinational Logic: Two and Three inputs of CMOS NOR gate – Compound gates in CMOS.

UNIT-IV (10 hrs)

VHDL: Brief History, Logical, Relational, Arithmetic, Shift and Rotate Operators, Data types.

Verilog HDL: Brief History, Logical, Relational, Arithmetic, Shift and Rotate Operators, Data types
– Comparison of VHDL and Verilog HDL.

UNIT-V (14 hrs)

Data – Flow Description' s and HDL programs:-

Basic Logic Gates, Universal Gates, Half-Adder, Multiplexer, Magnitude Comparator, Binary Adder.

TEXT BOOKS

1. VLSI Design by Vilas S.Baged.
2. VHDL and Verilog programming By Nazeih M.Botros.
3. VLSI Design By A.Albert Raj and T.Latha.

ELECTRONICS : LAB – 6C

VHDL / Verilog HDL LAB

(any six experiments should be done)

1) BASIC GATES CIRCUIT
2) UNIVERSAL GATES
3) HALF – ADDER
4) FULL – ADDER
5) MULTIPLEXER
6) DECODER
7) S-R LATCH
8) D-LATCH
9) MAGNITUDE COMPARATOR
10) BINARY ADDER

Semester-wise Revised Syllabus under CBCS, 2020-21

Domain Subject: **ELECTRONICS**

IV Year B.Sc., - Semester – V

Course 7C: DATA COMMUNICATION AND NETWORKING

(Skill Enhancement Course (Elective), 3+2 Credits)

Max. Marks: Theory:100 + Practical:50

UNIT – I (12 Hrs):

Data Communication and its Components – Introducing of Network, Types of Networks: Personal Area Network, wide Area Network.

UNIT-II (14 hrs):

Network Topologies: Bus Topology, Star Topology, Ring Topology, Mesh Topology, Tree Topology, Hybrid, Topology.

UNIT-III (10 Hrs):

Transmission Media' s - Guided Media: Twisted pair Cable, Coaxial Cable, Optical Fiber Cable. Un-Guide Media: Radio Waves, Microwaves, Infrared.

UNIT-IV (10 Hrs):

Data Transmissions: Digital – To – Digital Conversion (line coding only), Analog – To – Digital Conversion (PCM only), Digital – To – Analog (ASK only) Analog – To – Analog Transmission (AM only) – Transmission Modes (Parallel and Serial).

UNIT – V (14 Hrs):

Frequency Division Multiplexing, Time Division Multiplexing Wave Division Multiplexing. Modems: Traditional Modems, Cable Modems.

TEXT BOOKS

1. Data communication and Networking (2 Edition) By Behrouz A.Forouzan.
2. Data and Communication by Stallings Williams.
3. Computer Networks By Kurose James F

ELECTRONICS: LAB – 7C

DATA COMMUNICATION AND NETWORKING

(Any Six Experiments Should Be Done)

1. TO STUDY DIFFERENT TYPES OF TRANSMISSION MEDIA.
2. TO STUDY THE SERIAL INTERFACE USING RS-232.
3. TO STUDY LAN USING STAR TOPOLOGY
4. TO STUDY LAN USING BUS TOPOLOGY
5. TO STUDY LAN USING TREE TOPOLOGY
6. TO STUDY CONFIGURE MODEM OF COMPUTER
7. TO STUDY CONFIGURE HUB/SWITCH
8. Analog to Digital Conversion
9. Digital to Analog conversion