SRI KRISHNADEVARAYA UNIVERSITY

ANANTAPURAMU

THREE YEARS B.Sc - ELECTRONICS COURSE STRUCTURE - SEMESTER WISE UNDER CBCS

SEMESTER	PAPER	YEAR / TITTLE OF THE PAPERS	CREDITS	MARKS		TOTAL MARKS
				IA	ES	
		FIRST YEAR (w.e.f 2015 – 2016)				
I	1	BASIC CIRCUIT THEORY	4	25	75	100
		LAB-1 : ELECTRONICS	2		50	50
II	2	ELECTRONICS DEVICES AND CIRCUITS	4	25	75	100
		LAB-2 : ELECTRONICS	2		50	50
		SECOND YEAR (w.e.f 2016 - 2017)				
III	3	DIGITAL ELECTRONICS	4	25	75	100
		LAB-3 : DIGITAL ELECTRONICS	2		50	50
IV	4	ANALOG & DIGITAL I C APPLICATIONS	4	25	75	100
		LAB-4 : ANALOG & DIGITAL I C 'S	2		50	50
		THIRD YEAR (w.e.f 2017 - 2018)				
V	5	MICRO PROCESSOR – 8085 & APPLICATIONS	4	25	75	100
		LAB-5 : MICRO PROCESSOR – 8085	2		50	50
		OPTIONAL ELECTIVE PAPERS (CHOOSE ANY ONE)				
	6 (A)	ELECTRONIC COMMUNICATIONS	4	25	75	100
		LAB-6 (A) : ELECTRONIC COMMUNICATIONS	2		50	50
	6 (B)	CONSUMER ELECTRONICS	--------- do ----------			
		LAB-6 (B) : CONSUMER ELECTRONICS				
VI	7	CLUSTER ELECTIVES -I (CHOOSE ANY ONE CLUSTER)				
		CLUSTER – A :				
		MICRO CONTROLLER – 8051 & APPLICATIONS	4	25	75	100
		Lab - 7 : MICRO CONTROLLER – 8051	2		50	50
		CLUSTER – B :				
		OPTICAL FIBER COMMUNICATION	----- do -----			
		Lab - 7 : OPTICAL FIBER COMMUNICATION				
		CLUSTER – C :				
		MATHEMATICAL METHODS AND ANALYSIS USING MATLAB	------ do -----			
		Lab - 7 : MATLAB				
		CLUSTER ELECTIVES –II (SELECT ONLY CONCERNED CLUSTER)				
	8	CLUSTER – A				
		A-1 : VLSI DESIGN	4	25	75	100
		A-2 : DATA COMMUNICATION AND NETWORKING	4	25	75	100
		A-3 : PROJECT WORK	4	25	75	100
		Lab - 8 : VHDL / Verilog HDL	2		50	50
		Lab - 9 : DATA COMMUNICATION AND NETWORKING	2		50	50
		CLUSTER – B				
		B-1 : SATELLITE COMMUNICATIONS	----- do ---------			
		B-2 : WIRELESS COMMUNICATIONS				
		B-3 : PROJECT WORK				
		Lab - 8 : SATELLITE COMMUNICATIONS				
		Lab - 9 : WIRELESS COMMUNICATIONS				
		CLUSTER – C				
		C-1 : DIGITAL SIGNAL PROCESSING	------ do ------			
		C-2 : CONTROL SYSTEMS				
		C-3 : PROJECT WORK				
		Lab - 8 : DIGITAL SIGNAL PROCESSING				
		Lab - 9 : CONTROL SYSTEMS				
IMPORTANT NOTICE : **In case selecting CLUSTER-A in PAPER-7 (SEMESTER-VI) From CLUSTER ELECTIVES –I then Compulsory Should Take CLUSTER-A Only in PAPER-8 From CLUSTER ELECTIVES –II . The Same method is Proceed in The Subsequent CLUSTERS for Choosing Clusters .**						
		TOTAL	58	250	1200	1450

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THIRD YEAR B.Sc - ELECTRONICS – SYLLABUS :: SEMESTER - VI

PAPER - 7 : CLUSTER-A

PAPER - 7 (A) : MICRO CONTROLLER - 8051 & APPLICATIONS

(w. e .f 2017-18)

Work load: 60 hrs **4 hrs/week**

UNIT- I (12 hrs) :

Architecture and Pin Discription of 8051 - Memory organization - Port Organizations - Interrupts - Timers and Counters.

UNIT- II (12 hrs) :

Classification of Instruction set of 8051 - Data transfer , Arithmatic , Logical , Single Bit , rotate , Compare , jump , Loop and Call instructions - Addressing Modes.

UNIT- III (12 hrs) :

Programs : Addition , Subtraction , Multiplication (repeated addition method) , Division (repeated subtraction method) , Smallest , Largest , Ascending and Descending orders (all 8-bits only).

UNIT- IV (12 hrs) :

Interfacing of 8255 with 8051 - Interfacing of 7 Segment LED Display with 8051 - Interfacing of Matrix (4 x 4) Key Board - Interfacing of L C D with 8051 - Interfacing of Temparature Measurement

UNIT- V (12 hrs) :

Interfacing of Binary Counter - Interfacing of Stepper Motor - Interfacing of A D C - Interfacing of DAC (Square wave generation only) - Serial Communications (RS-232) .

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TEXTBOOKS

1. Kenneth 1. Ayala, "The 8051 Microcontroller, Architecture, Program and Application" Pen ram International.
2. Muhammed Ali Mazidi, Janice GillispieMazidi "The 8051 Microcontroller and Embedded Systems" -Low Price Edition.
3. Microprocessors & Microcontrollers by N. Senthilkumar, M. Saravanan& S. Jeevananthan, 1st edition. Oxford press (Helpful for interfacing applications)
4. Micro corurollers: Theo & App by Ajay V. Deshmuk Tata McGraw-Hill Education

ELECTRONICS : LAB - 7 (A)

(MICRO - CONTROLLER 8051 - LAB)

Work load: 30 hrs per semester **2 hrs/week**

(Any Six Experiments should be done)

1. Multiplication & Division of Two 8-Bit Numbers by using kit only .
2. Largest & Smallest Number of two 8-bit numbers by using kit only.
3. Ascending & Descending order by using kit only
4. Interfacing - Stepper motor to rotate Clockwise or Anti Clock wise
5. Interfacing - LCD to Display Characters and Numbers .
6. Interfacing - DAC (Square Wave Generation)
7. Interfacing - Binary Counter (Count From : 00 H to FF H)

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THIRD YEAR B.Sc - ELECTRONICS – SYLLABUS : SEMESTER : VI

PAPER-8 : **CLUSTER-A**

A1 : VLSI DESIGN

(w. e .f 2017-18)

Work load: 60 hrs **4 hrs/week**

UNIT - I (12 hrs) :

Defination , Classification's , Advantages of IC's - MOS : Enhancement Modes of NMOS , PMOS - 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 , Arithmatic , Shift and Rotate Operators , Data Types .

Verilog HDL : Brief History , Logical , Relational , Arithmatic , Shift and Rotate Operators , Data Types . Comparison of VHDL and Verilog HDL .

UNIT- V (l4 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. Bagad
2. VHDL and Verilog Programming By Nazeih M.Botros
3. VLSI Design By A.Albert Raj and T.Latha

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ELECTRONICS : LAB - 8

VHDL / Verilog HDL LAB

Work load: 30 hrs per semester **2 hrs/week**

ANY SIX EXPERIMENTS SHOULD BE ONE

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

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THIRD YEAR B.Sc- ELECTRONICS – SYLLABUS :: SEMESTER: VI

PAPER - 8 : CLUSTER-A

A2 : DATA COMMUNICATION AND NETWORKING

(w. e .f 2017-18)

Work load: 60 hrs 4 hrs/week

Unit- 1 (12 Hrs) :

Data Communication and its Components - Introduction of Network , Types of Networks : Personal Area Network , Local Area Network , Metropolitan Area Network , Wide Area Network .

Unit- 2 (14 Hrs) :

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

Unit- 3 (10 Hrs) :

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

Unit-4 (10 Hrs) :

Data Transmissions : Digital - To - Digital Conversion (Line Coding only) , Analog - To - Digital Conversion (PCM only) , Digital - To - Analog Conversion (ASK only) , Analog - To - Analog Transmission (AM only) - Transmission Modes (Parallel and Serial)

Unit- 5 (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 Computer Communication By Stallings William
3. Computer Networks By Kurose James F

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ELECTRONICS : LAB - 9

DATA COMMUNICATION AND NETWORKING

Work load : 30 hrs per semester **2 hrs/week**

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

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THIRD YEAR B.Sc - ELECTRONICS : SEMESTER – VI

PAPER-8 : CLUSTER - A / B / C

A3 / B3 / C3 : PROJECT WORK

Work load : 60 hrs (4 Hours/week) **Max.Marks : 75**

The objective of the Project is to motivate them to work in emerging / latest technologies, help the students to develop ability , to apply theorical and Practical tools / techniques to solve real life problems related to industry , academic institutions and research laboratories. **the Project is of 4 hours / week for VI Semester : PAPER - 8 (A3 / B3 / C3)** duration and a students is expected to do Planning , Analysing , Coding, and Implementing the project . the initiation of project should be with the project proposal . the synopsis approval will be given by the project guides (Subject Lecturer only).

The Project Proposal should include the following :-

- Tittle , Objectives , Apparatus , Circuit Diagrams , Model Graphs , Tabular Colums
- Input , Observations , Process logic , Programming , Output , Flow chats , Algorithm
- Advantages and Dis-advantages , Application's .....etc

The Project work should be an only **ONE MEMBER** . the students shall submit a project report and defined their dissertation infront of Examiner . The Scheme of Evaluation of Project Work is given below.

MARKS DISTRIBUTION IN PROJECT WORK

Subject : ELECTRONICS : PAPER - 8 (A3 / B3 / C3)) **Max. Marks : 75**

S.No	PROJECT WORK DETAILS	ALLOTED MARKS			PASS MARKS (40 %)
1	DESSERTATION	10	RECORD MARKS	10	30
2	PRESENTATION	30	EXPERIMENT MARKS	65	
3	COMPREHENSIVE – VIVA VOCE	35			
	TOTAL	75			30

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