



DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING

III YEAR

M SCHEME

V SEMESTER

2015-2016 onwards

ELECTRONIC SYSTEM DESIGN

CURRICULAM DEVELOPMENT CENTRE

M-SCHEME

Course Name : Electronics and Communication Engineering

Subject Code : 34073

Semester : V Semester

Subject Title : ELECTRONIC SYSTEM DESIGN

TEACHING AND SCHEME OF EXAMINATION:

Number of Weeks/ Semester : 15 weeks

Subject	Instruction		Examination			
	Hrs./ Week	Hrs./ Semester	Marks			Duration
			Internal Assessment	Board Examination	Total	
Electronic System Design	5	75	25	75	100	3 Hrs

TOPICS AND ALLOCATION:

UNIT	TOPIC	TIME (Hrs)
I	Power supplies	13
II	Amplifier, Voltage to current and current to voltage converter	13
III	ADC, DAC, Instrumentation amplifier and transducer	13
IV	Signal generators	12
V	Microcontroller based application	12
	Revision ,Test	12
TOTAL		75

RATIONALE:

The rationale behind introducing this subject is to make the students understand the structure, working and all other relevant aspects of electronic systems which has become an integral part of Electronic media which is growing at an exponentially high rate all around the world.

OBJECTIVES:

- To understand to design of DC regulated power supply of various voltages with different protection circuits.
- To understand the design of different types of amplifiers for various application.
- To understand the use of various transducers and make use them.
- To design various systems using the analog data collected from transducers
- To understand the use of microcontrollers for various application

34073-ELECTRONIC SYSTEM DESIGN

DETAILED SYLLABUS

UNIT	NAME OF THE TOPIC	HOURS
1	<u>DESIGN OF POWER SUPPLY</u> DC power supply with filters - Regulators and their types - Protection circuits - Multi output and variable power supply design - Rectifiers – types - half wave, full wave.	13
2	<u>DESIGN OF SMALL SIGNAL AMPLIFIERS</u> CB,CE configuration - Emitter follower - Darlington pair amplifiers with and without – Bootstrapping - Two stage direct coupled amplifiers - Design of audio power amplifier with drivers - Design of simple PA system - Voltage to current converter, current to voltage converter	13
3	<u>DATA ACQUISITION SYSTEM</u> Analog to digital converter (ADC) - Digital to analog converter (DAC) - Design of Instrumentation amplifier with the bridge type – transducer - Temperature measurement - Design of Electronic voltmeter and ammeter - Design of – multimeter - Display system.	13
4	<u>DESIGN OF FUNCTION GENERATORS</u> Design of AM signal using multiplier IC - AM signal demodulation using envelope detector - Design of FM signal using VCO (using IC NE566) - FM signal demodulation using phase discriminator and ratio detector.	12
5	<u>HIGH VOLTAGE/HIGH CURRENT DRIVER</u> Circuit for Relay and motor control applications - Microcontroller based closed loop system - Security systems, Scrolling display - Microcontroller based stepper motor - Microcontroller based temperature sensor and relay	12
	Revision & Test	12

REFERENCE BOOKS:

SL.No	Title	Author	Publisher with Edition
9.	A Monograph on Electronic s Design Principles,	N.C.Goyel, R.K.Khetan,	Khanna Publishers -Second Edition
10.	Electronic devices and circuits	Allen Mottershead	Prentice hall of india pvt limited, 19 th edition, 1997
11.	A Monograph on Electronic s Design Principles,	N.C.Goyel, R.K.Khetan,	Khanna Publishers -Second Edition
12.	Electronic devices and circuits	Allen Mottershead	Prentice hall of india pvt limited, 19 th edition, 1997
13.	The art of electronics	Paul Horowitz	Cambridge University-2 nd edition Press -2003
14.	Electronic principles and applications	Charles.A.Schuler	Mc graw hill international edition, 3 rd edition, 1989
15.	8051 Micro controllers	Mazidi and D.Mackinlay	Pearson education , low price edition, 2006