



Department of ELECTRONICS

St. Edmund's College

NAAC Accredited A

Affiliated to North Eastern Hill University

Recognized by the University Grant Commission under 2 (f) and 12 (B) of the UGC Act 1956

Awarded STAR STATUS COLLEGE (DBT, Govt. of India)



Department/HOD Email dhruba_choudhury@rediffmail.com



<http://sec.edu.in>

Name of the Teacher		Name of the Teacher	
Dhruba Choudhury	DC	Hemen Ch Medhi	HM
Soumen Chakraborty	SC	Bawan Pyntngelang Thangkhiew	BT
Kishore Chakraborty	KC		

SEMESTER: IST SEMESTER

PAPER NO: ELEC 100

**NAME OF PAPER: BASIC NETWORK ANALYSIS
THEORY**

Name of the Teacher	Unit	Topics
DC	UNIT III	Network Theorems
SC	UNIT II	AC Circuit Analysis
KC	UNIT I	Basic Circuit Concept and DC Circuit analysis
HM	UNIT I	Basic Circuit Concept and DC Circuit analysis
BT	UNIT III	Network Theorems

SEMESTER: IST SEMESTER

PAPER NO: ELEC 100

**NAME OF PAPER: BASIC NETWORK ANALYSIS
PRACTICALS**

Name of the Teacher	Unit	Topics
DC	UNIT IV	Measurement of Amplitude, Frequency & Phase difference using CRO.
SC	UNIT IV	Designing of a Low Pass RC Filter and study of its Frequency Response.
		Designing of a High Pass RC Filter and study of its Frequency Response
		Study of the Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width
KC	UNIT IV	RC Charging and Discharging
		RC Circuits: Time Constant, Differentiator, Integrator
HM	UNIT IV	Resistance in series, parallel and series – Parallel. (b) Capacitors & Inductors in series & Parallel., (c) Multimeter – Checking of components.,
BT	UNIT IV	Verification of Norton's theorem
		Verification of Thevenin's Theorem.
		Verification of the Maximum Power Transfer Theorem



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SEMESTER: IIND SEMESTER

PAPER NO: ELEC 150

NAME OF PAPER: BASIC NETWORK ANALYSIS

THEORY

Name of the Teacher	Unit	Topics
DC	UNIT I	Semiconductor Basics
SC	UNIT II	P-N Junction Diode and Bipolar Junction Transistors (BJT)
KC	UNIT II	P-N Junction Diode and Bipolar Junction Transistors (BJT)
HM	UNIT III	Field Effect Transistors
BT	UNIT II & UNIT III	P-N Junction Diode and Bipolar Junction Transistors (BJT) Power Devices

SEMESTER: IIND SEMESTER

PAPER NO: ELEC 150

NAME OF PAPER: BASIC NETWORK ANALYSIS

PRACTICALS

Name of the Teacher	Unit	Topics
SC	UNIT IV	Study of the I-V Characteristics of a semiconductor junction diode under forward bias and reverse bias condition.
		Study of the I-V Characteristics of a Zener Diode under forward bias and reverse bias condition.
KC	UNIT IV	Study of the I-V Characteristics of the UJT.
		Study of the I-V Characteristics of the Common Emitter Configuration of BJT and obtain r_i , r_o , β .
HM	UNIT IV	Study of the I-V Characteristics of JFET.
BT	UNIT IV	Determination of energy gap (band gap) of a semiconductor using a P-N Junction Diode.
		Study of the I-V Characteristics of the SCR.
		Study of the I-V Characteristics of the Common Base Configuration of BJT and obtain r_i , r_o , α .



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SEMESTER: IIIRD SEMESTER

PAPER NO: ELEC 301(T)

NAME OF PAPER: Feedback, Oscillator, OpAMP and digital THEORY

Name of the Teacher	Unit	Topics
DC	UNIT I	Study of Oscillator
SC	UNIT I	Study of Feedback
KC	UNIT III	Operational Amplifier
HM	UNIT II	Multivibrator
BT	UNIT IV	Logic Circuit and Fundamentals of Digital Electronics.

SEMESTER: IIIRD SEMESTER

PAPER NO: ELEC 301(P)

NAME OF PAPER: Feedback, Oscillator, OpAMP and digital PRACTICAL

Name of the Teacher	Unit	Topics
KC		Study the Hybrid parameters of a transistor
SC		Study Of a RC coupled amplifier with and without feedback
SC		Study of CMRR using a Differential amplifier
DRC		Study the operation of a Monostable multivibrator
DRC		Study the operation of a Bistable multivibrator
DRC		Study the Schmitt trigger
KC		Study the Wein bridge oscillator
HM		Study the characteristics of a Fet and its parameters
HM		Study the characteristics of a UJT and its working as an oscillator
BT		Study of AND ,OR and NOT gate
BT		Study of NOR and NAND gates & verification of NOR & NAND using iCs
BT		Study of XOR & XNOR gates & verification of XOR & XNOR logic



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SEMESTER: IVTH SEMESTER

PAPER NO: ELEC 401(T)

NAME OF PAPER: Laplace transformation, Analogue Communication Radio wave propagation

IC technology

THEORY

Name of the Teacher	Unit	Topics
DC	UNIT I	Laplace transformation
SC	UNIT I	Fourier Series and Transform
KC	UNIT III	Analogue Communication
HM	UNIT II	Radio wave propagation
BT	UNIT IV	IC technology

SEMESTER: IVTH SEMESTER

PAPER NO: ELEC 401(P)

NAME OF PAPER: Laplace transformation, Analogue Communication Radio wave propagation

IC technology

PRACTICAL

Name of the Teacher	Unit	Topics
KC		Study of OP-AMP as a differentiator
KC		Study of OP-AMP as an integrator
SC		OP-AMP as adder
SC		OP-AMP as a subtractor
DRC		Study of OP-AMP as inverting amplifier
DRC		Study of OP-AMP as a non-inverting amplifier
KC		Study CMRR of an OP-AMP.
BT		Study of Schmitt trigger using IC 741
SC		To study the input offset voltage of an OP-AMP.
BT		Study of an astable multivibrator using OP-AMP
HM		Study of IC555 as astable multivibrator
HM		Study of IC555 as monostable multivibrator
BT		Experiments with Active filters a. High Pass b. Low pass c. Band pass
HM		Study of logarithmic amplifier using IC741
BT		Generation of square wave using OP-AMP



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SEMESTER: VTH SEMESTER

PAPER NO: ELEC 501(T)

NAME OF PAPER: Digital Electronics

THEORY

Name of the Teacher	Unit	Topics
HM	UNIT I	Logic families and combinational Logic Circuits
KC	UNIT II	Flip-Flops, Counters, Registers
KC	UNIT III	Memory, ADC and DAC
HM	UNIT IV	Basics in Microprocessor.

SEMESTER: VTH SEMESTER

PAPER NO: ELEC 502(T)

NAME OF PAPER: Optical fiber,microwave , Power electronics

THEORY

Name of the Teacher	Unit	Topics
SC	UNIT I	Optical Fibre
SC	UNIT II	Pulse Modulation
DRC	UNIT III	Microwaves
BT	UNIT IV	Power Electronics

SEMESTER: VTH SEMESTER

PAPER NO: ELEC 501(P)

NAME OF PAPER:

PRACTICAL

Name of the Teacher	Unit	Topics
DRC		To study the characteristics of a SCR
SC		To study the characteristics of a phototransistor,LDR,Opto-coupler
SC		To study the characteristics of a LED,Photodiode,Photovoltaic cell.
HM		Study of AND ,OR and NOT gates using ICs.
BT		Study of NOR and NAND gates & verification of NOR & NAND using iCs
BT		Study of XOR & XNOR gates & verification of XOR & XNOR using iCs.
KC		Sudy of analog to digital and Digital to analog converters.
HM		Study Of ALU chip



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SEMESTER: VTH SEMESTER

PAPER NO: ELEC 502(P)

NAME OF PAPER:

PRACTICAL

Name of the Teacher	Unit	Topics
BT		Study of Decade Counters using IC 7490 and 7493
BT		Study of Left and Right shift Registers and Ring counters
KC		Study of 2 Bit Binary counters
KC		To build XOR & XNOR gates & verification of XOR & XNOR using NAND Gates
HM		To build Half and Full Adder using Ic NAND Gates and verify its Logic
BT		Study of various types of Flip Flops
HM		Study of Digital IC Trainers
DRC		Study of the Voltage Distribution along a transmission line

SEMESTER: VITH SEMESTER

PAPER NO: ELEC 601(P)

NAME OF PAPER:

THEORY

Name of the Teacher	Unit	Topics
HM	UNIT I	Antenna
KC	UNIT II	Transmission Line
DRC	UNIT II	WaveGuide
BT	UNIT III	Fundamental of Control system

SEMESTER: VITH SEMESTER

PAPER NO: ELEC 602(P)

NAME OF PAPER:

THEORY

Name of the Teacher	Unit	Topics
HM	UNIT I	Antenna
KC	UNIT II	Transmission Line
DRC	UNIT II	WaveGuide
BT	UNIT III	Fundamental of Control system
SC,KC,HM,BT	PROJECT	Maxwell's Equation,Communication,Power Electronics,Simulation of Schottky Diodes



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