



Department of Electronics
Teaching Plan for Semester – 1

Name of Faculty: Arnab Samadder

Paper: CC –2 Theory (Mathematics Foundation for Electronics)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Ordinary Differential Equation
6– 14	Series Solution of Differential Equations and Special Functions
15 – 24	Matrices
25 – 34	Sequences and Series
35 – 46	Complex Variables and Functions
47 – 56	Laplace transform



Department of Electronics
Teaching Plan for Semester – 1

Name of Faculty: Arnab Samadder

Paper: CC –1 Practical (Basic Circuit Theory and Network Analysis)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Familiarization with passive components, multimeter, energy sources, voltage and current divider circuit
6 – 10	Measurements of amplitude, frequency and phase difference using CRO
11 – 15	Verification of KVL
16 – 20	Verification of KCL
21 - 25	Verification of Thevenin's Theorem
26 - 30	Verification of Norton's Theorem
31- 35	Verification of Superposition Theorems
36-40	Verification of Maximum Power Transfer Theorem
41-45	RC Circuits
46-47	Low Pass RC filter
48-50	High Pass RC filter
51-56	Frequency response of a series LCR circuit



Department of Electronics
Teaching Plan for Semester – 5

Name of Faculty: Arnab Samadder

Paper: CC – 12 Theory (Microprocessors and Microcontrollers)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 2	Introduction to Microprocessors
3 – 10	Microprocessor 8085 architecture
10 – 20	8085 instructions, timing diagram, stack, subroutines, counter and time delays, interrupts
21 – 28	Assembly language program, interfacing with 8255 PPI chip
29 – 31`	Introduction to microcontroller, microcontroller features
32 – 36	Introduction to PIC 16F887 microcontroller, features
37 – 42	Memory organization, ADC, EUSART, MSSP
43 – 46	Instruction set, interrupts, addressing mode
47 – 51	Programming
52 – 56	Interfacing to PIC16F887



Department of Electronics
Teaching Plan for Semester – 5

Name of Faculty: Arnab Samadder

Paper: CC – 12 Practical (Microprocessors and Microcontrollers)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 2	Block transfer, addition, subtraction in 8085
3 – 10	Multiplication, Division, odd-even isolation in 8085
10 – 20	Array, ascending, descending, Fibonacci series in 8085
21 – 28	To search maximum and minimum number, Square root, GCD, Truth table verification of logic gates in 8085
29 – 31`	LED blinking with a specific time delay, Solid State Relay Interface using Microcontroller
32 – 36	Interfacing LCD, stepper motor, rotating stepper motor using Microcontroller
37 – 42	To test 74XX series IC, generation of sine, cosine, triangular, sawtooth waveforms using Microcontroller
43 – 46	ADC, Display of 4-digit decimal number using Microcontroller
47 – 51	Speed control of DC motor using stepper motor using Microcontroller
52 – 56	Interfacing matrix keyboard, serial communication between Microcontroller and PC



Department of Electronics
Teaching Plan for Semester – 3

Name of Faculty: Dr. Kunal Sinha

Paper: CC – 5 (Semiconductor Device) (Theory)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 10	Semiconductor Basics
11 – 13	Carrier Transport Phenomenon
14 – 20	Physics of Junctions
21 – 26	PN junction Diodes
27 – 28	Application of Diode
29 – 38	Bipolar Junction Transistor
39 – 40	FET
41 – 43	JFET
44 – 50	MOSFET
51 – 56	Power Devices

Paper: CC – 5 (Semiconductor Device) (Practical)

Lecture Hours: 56

Lecture Number	Proposed Topics to be taught
1 – 8	I-V characteristics of PN junction diode and Zener Diode
9 – 14	I-V characteristics of CE mode BJT configuration
15 – 20	I-V characteristics of CB mode BJT configuration
21 – 26	I-V characteristics of SCR
27 – 32	I-V characteristics of DIAC
33 – 38	I-V characteristics of TRIAC
39 – 44	I-V characteristics of JFET / MOSFET
45 – 50	I-V characteristics of Solar Cell
51 – 56	Study of Hall Effect



Department of Electronics

Teaching Plan for Semester – 5

Name of Faculty: Dr. Kunal Sinha

Paper: DSE – B2 (Power Electronics) (Theory)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Power Devices
6 – 12	Semiconductor Controlled Rectifier
12 – 14	Application of SCR
15 – 19	DIAC, TRIAC
20 – 22	IGBT
23 – 24	Power MOSFET
25 – 30	Power Inverters
31 – 36	Choppers
37 – 42	Regulators and Converters
43 – 56	Electromechanical Machines

Paper: DSE – B2 (Power Electronics) (Practical)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	I-V characteristics of DIAC
6 – 10	I-V characteristics of TRIAC
11 – 15	I-V characteristics of SCR
16 – 21	SCR as half wave and full wave rectifier
22 – 27	DC motor control using SCR
28 – 32	DC motor control using TRIAC
33 – 37	AC voltage controller using TRIAC using UJT triggering
38 – 42	Study of Parallel and Bridge Inverter
43 – 47	Design of Snubber Circuit
48 – 52	I-V characteristics of MOSFET and IGBT
53 – 56	Study of Chopper circuit



Department of Electronics
Teaching Plan for Semester – 1

Name of Faculty: Madhurima Chatterjee

Paper: CC –1 Theory (Basic Circuit Theory and Network Analysis)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Basic Circuit Concepts: passive components and their variations/ varieties
6– 10	Basic Circuit Concepts: Energy sources, measurement of passive components
11 – 17	KVL, KCL, node and mesh analysis, Star-delta network and their conversion
18 – 24	Transient Response
25 – 32	Sinusoidal voltage and current, RL, RC, RLC network under sinusoidal excitation, phasor, complex impedance
33 – 40	Resonance, passive filter, passive integrator and differentiator
41-48	Network Theorems
49-56	Z, Y, ABCD parameters, network graph theory



Department of Electronics
Teaching Plan for Semester – 1

Name of Faculty: Madhurima Chatterjee

Paper: CC –1 Practical (Basic Circuit Theory and Network Analysis)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Familiarization with passive components, multimeter, energy sources, voltage and current divider circuit
6 – 10	Measurements of amplitude, frequency and phase difference using CRO
11 – 15	Verification of KVL
16 – 20	Verification of KCL
21 - 25	Verification of Thevenin's Theorem
26 - 30	Verification of Norton's Theorem
31- 35	Verification of Superposition Theorems
36-40	Verification of Maximum Power Transfer Theorem
41-45	RC Circuits
46-47	Low Pass RC filter
48-50	High Pass RC filter
51-56	Frequency response of a series LCR circuit



Department of Electronics
Teaching Plan for Semester – 3

Name of Faculty: Madhurima Chatterjee

Paper: CC – 7 Theory (Electromagnetics)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 8	Vector Analysis, Poisson's Equation, Laplace Equation
9 – 20	Electrostatics
21 – 31	Magnetostatics
32 – 42	Time Varying Fields and Maxwell's Equations
43 – 56	Electromagnetic wave propagation

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Department of Electronics
Teaching Plan for Semester – 3

Name of Faculty: Madhurima Chatterjee

Paper: CC – 7 Practical (Electromagnetics)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 5	Understanding and plotting vectors
6 – 10	Transformation of vectors in various coordinate systems
11 – 15	2D and 3D graphical plotting
16 – 20	Representation of gradient, divergence and curl of a vector field
21 – 25	Plot of electric field and electric potential
26-30	Plot of magnetic flux density
31-40	Programs and contour plots to illustrate the method of image
41-48	Solution of Poisson's and Laplace Equation
49-56	Introduction to computational electromagnetics



Department of Electronics
Teaching Plan for Semester – 5

Name of Faculty: Sourav Kumar Bhowmick

Paper: CC – 11 (Electronic Instrumentation), Theory

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 10	Quantity of Measurement
11 – 13	Basic measurement Instruments
14 – 20	Connector and probe
21 – 26	Measurement of Resistance and Probe
25 – 26	A/D and D/A converter
27 – 38	Oscilloscope
39 – 40	Oscilloscope
41 – 43	Signal Generator
44 – 50	Transducer and Sensor
51 – 56	Transducer and Sensor

Name of Faculty: Sourav Kumar Bhowmick

Paper: CC – 11 (Electronic Instrumentation), Practical

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 12	Design of Multirange voltmeter and Ammeter
13 – 18	Measurement of Resistance by whearstone Bridge
19 – 25	Measurement of capacitance by de Sautys
26 – 29	Measurement of Low resistance by Kelvin Bridge
30 – 36	Instrumentation amplifier
37 – 42	Study of LDR characteristics
43 – 46	LVDT
47 – 49	Thermistor characteristics
50 – 53	Transducer Strain Gauge
54 – 56	Implementation of Temperature controller

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Department of Electronics
Teaching Plan for Semester – 3

Name of Faculty: Sourav Kumar Bhowmick

Paper: SEC A1(Design and Fabrication of printed circuit Board)

Lectures Allotted: 28

Lecture Number	Proposed Topics to be taught
1 – 5	PCB Fundamentals
6 – 12	Schematic and Layout Design
12 – 14	Technology of PCB
15 – 19	Technology of PCB
20 – 22	Technology of PCB
23 – 24	PCB Technology



Department of Electronics

Teaching Plan for Semester – 5

Name of Faculty: Rabia Sultana

Paper: DSE-5-A-2 (Control Systems)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 12	Introduction to Control Systems
13– 20	Time Domain Analysis
21 – 26	Concept of Stability
27 – 42	Frequency Domain Analysis
43 – 50	State Space Analysis
51 – 56	Controllers and Compensation Techniques

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Department of Electronics

Teaching Plan for Semester – 3

Name of Faculty: Rabia Sultana

Paper: CC – 6 (Electronic Circuits)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 14	Diode Circuits
15 – 28	Bipolar Junction Transistor Circuits
29 – 42	Feedback Amplifiers
43 – 44	MOSFET Circuits
45 – 54	Power Amplifiers
55 – 56	Single Tuned Amplifiers

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Department of Electronics

Teaching Plan for Semester – 5

PRACTICAL

Name of Faculty: Rabia Sultana

Paper: DSE-5-A-2-P (Control Systems)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 6	To Study Characteristics of (a) Synchro Transmitter Receiver (b) Synchro as Error Detector
7– 9	To Study Position Control of DC Motor
10 – 12	To Study Speed Control of DC Motor
13 – 15	To Find Characteristics of AC Servo Motor
16 – 24	To Study Time Response of Type 0, 1 and 2 Systems
25 – 30	To Study Frequency Response of First and Second Order Systems
31-33	To Study Time Response Characteristics of Second Order System
34 - 36	To Study Effect of Damping Factor on Performance of Second Order System
37 - 45	To Study Frequency Response of Lead and Lag Networks
45 - 56	Study of P, PI and PID Controller



Department of Electronics

Teaching Plan for Semester – 3

PRACTICAL

Name of Faculty: Rabia Sultana

Paper: CC –06-P (Electronic Circuits Lab)

Lectures Allotted: 56

Lecture Number	Proposed Topics to be taught
1 – 9	Study of Half-Wave Rectifier and Full Wave (Centre Tap and Bridge) Rectifier
10 – 15	Study of Power Supply using C Filter and Zener Diode
16 - 24	Designing and Testing of 5V/9V DC Regulated Power Supply using Two Transistors and find its Load Regulation
25 - 33	Study of Clipping and Clamping Circuits
34 – 42	Study of Fixed Bias, Voltage Divider Bias and Collector to Base Bias Feedback Configuration for Transistors
43 – 45	Designing of a Single Stage CE Amplifier
46 - 48	Study of the Colpitt's Oscillator
49 - 51	Study of the Phase Shift Oscillator
52 - 56	Study of the Frequency Response of Common Source FET Amplifier