MARTHANDAM COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ELECTRONIC CIRCUITS I LAB

Equipments Available in the Lab

Sl.No	Hardware	Specification	Quantity
	Major Equipments		
1	CRO	(30MHz)	15
2	Function Generators(3MHz)		
3	DC Regulated Power Supplies	(0-30)V	24
4	Ammeter		65
5	Voltmeter		42
6	Multimeter		10
7	FM stereo		2
8	Adopter	6V	2
9	Decade resistance box		15
10	Decade inductance box		30
11	Decade capacitance box		15
12	Ohm meter		3
13	LCR meter		1
14	RL/RC circuit kit		1
15	Series and parallel resonance kit		1
16	Time constant RC circuit kit		1
17	Digital storage oscilloscope		5
18	MSO		5
19	Signal sampling trainer kit		2
20	TDM trainer kit		2
21	PCM trainer kit		2
22	DM trainer kit		2
23	AM transmitter trainer kit		2
24	AM receiver trainer kit		2
25	FM transmitter trainer kit		2
26	FM receiver trainer kit		2
27	Line coding and decoding trainer kit		1

28	PAM, PPM, PWM trainer kit		1
29	QPSK trainer kit		1
30	PSK trainer kit		1
31	ASK trainer kit		1
32	FSK trainer kit		1
Minor Equipments			
33	BC 107, BC 148,2N2646,BFW10		
34	1N4007, Zener diodes		
35	Resistors, Capacitors, Inductors		
36	Bread Boards		

COURSES OFFERED

Sl.No	Odd Sem (Course code & Name)	Class	Even Sem (Course code & Name)	Class
1	-		EC 3461- Communication Systems Lab	II ECE
2	-		EC 3251 - Circuit Analysis	I ECE

EC 3461- COMMUNICATION SYSTEMS LABORATORY

OBJECTIVES:

- To study the AM & FM Modulation and Demodulation.
- To learn and realize the effects of sampling and TDM.
- To understand the PCM & Digital Modulation.
- To Simulate Digital Modulation Schemes.
- To Implement Equalization Algorithms and Error Control Coding Schemes

OUTCOMES:
Upon Completion of the course, the students will be able to:

- Design AM, FM & Digital Modulators for specific applications.
- Compute the sampling frequency for digital modulation**.**
- Simulate & validate the various functional modules of Communication system.
- Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes.

- Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of Communication system.

LIST OF EXPERIMENTS

1. AM- Modulator and Demodulator
2. FM - Modulator and Demodulator
3. Pre-Emphasis and De-Emphasis.
4. Signal sampling and TDM.
5. Pulse Code Modulation and Demodulation.
6. Pulse Amplitude Modulation and Demodulation.
7. Pulse Position Modulation and Demodulation and Pulse Width Modulation and Demodulation.
8. Digital Modulation – ASK, PSK, FSK.
9. Delta Modulation and Demodulation.
10. Simulation of ASK, FSK, and BPSK Generation and Detection Schemes.
11. Simulation of DPSK, QPSK and QAM Generation and Detection Schemes.
12. Simulation of Linear Block and Cyclic Error Control coding Schemes.

EC 3251- CIRCUIT ANALYSIS LABORATORY

OBJECTIVES:

- To gain hands- on experience in Thevenin & Norton theorem, KVL & KCL, and Superposition Theorems.
- To understand the working of RL,RC and RLC circuits

OUTCOMES:
Upon Completion of the course, the students will be able to:
- Design RL and RC circuits.
- Verify Thevinin & Norton theorem KVL & KCL, and Super Position Theorems.

LIST OF EXPERIMENTS

1. Verifications of KVL & KCL.
2. Verifications of Thevenin & Norton theorem.
3. Verification of Superposition Theorem.
4. Verification of maximum power transfer Theorem
5. Determination of Resonance Frequency of Series & Parallel RLC Circuits.
6. Transient analysis of RL and RC circuits.