Faculty of Technology

B. Tech. Plastic Technology

(R 2021) Semester – II

Course Code: BE3272

Course Title: Basic Electrical, Electronics and Instrumentation Engineering Laboratory

Sl. No.	Description of Equipment	Required numbers (for batch of 30 students
1.	**Verification of ohms and Kirchhoff's Laws**	
	1. DC Regulated Power supply (0 - 30 V variable)	1
	2. Bread Board	1
	3. Resistors	As per Circuit diagram
	4. Multimeter	1
	5. Connecting wires	As Required
2.	**Three Phase Power Measurement**	
	1. Three Phase Variable Load,	1
	2. Ammeters 0-10 A, MI,	2
	3. Wattmeters 0-5 A, 300V,	2
	4. Voltmeter 0-300v,MI	1
	5. Connecting wires	As Required
3.	**Load test on DC Shunt Motor.**	
	1. Ammeter MC (0-20A)	1
	2. Voltmeter MC (0-300)V	1
	3. Rheostat 7.5 Ω, 10 A	1
	4. Tachometer	1
	5. Field Rheostat 175 Ω, 1.5 A	1
	6. Connecting wires	As Required
4.	**Load test on Self Excited DC Generator**	
	1. DC shunt generator(0- 300V)	**1**
	2. Ammeter (0-30 A), (0-2A)	**1**
	3. Voltmeter (0-30V)	**1**
	4. Rheostat 175Ω, 250 Ω	**1**
	5. Tachometer	**1**
	6. Connecting Wires	As Required
5.	**Load test on Single phase Transformer**	
	1. Ammeter (0-30) A, (0-5) A	**1**
	2. Voltmeter (0-150)V, (0-300)V	**1**
	3. Wattmeter – 300V, 5A, UPF	**1**
	4. Autotransformer	**1**
	5. Single phase Transformer	**1**
	6. Connecting Wires	As Required
6.	**Load Test on Induction Motor**	
	1. Ammeter MI (0-20A)	1
	2. Voltmeter MI (0-300)V	1
	3. Wattmeter – 300V, 30 A	1
	4. Tachometer – Digital	1
	5. Connecting Wires	As Required
	6. Single phase Induction motor	1
7.	**Characteristics of PN and Zener Diodes**	

	1. PN Diode (BY127, OA79), Zener diode (6.8V, 1A) 2. Resistor 1 KΩ, 100Ω 3. Bread Board 4. DC Regulated Power supply (0 - 30 V variable) 5. Multimeter 6. Connecting wires	1 1 1 1 1 As Required
8.	**Characteristics of BJT** 1.Transistor (No-BC548) 2. Resistors- 1kΩ, 470KΩ, 1MΩ 3. Bread Board DC Regulated Power supply (0 - 30 V variable) 5. Multimeter 6. Connecting wires **Characteristics of SCR** 1. D C Power Supply (0-128 V), (0-32V), 2. Voltmeter (0-100V) 3. SCR TYN604 4. Digital multimeter 5. Ammeters (0-100mA, 0-25mA, 0-1mA) 6. Resistors 1KΩ, 1KΩ 7. Bread board 8. Connecting Wires **Characteristics of MOSFET** 1. MOSFET (2N7000) 2. Bread board 3. resistor (1KΩ, 100KΩ) 4. DC power supply (0-30V 5. Multimeter 6.Bread board 7. Connecting Wires	 1 1 1 1 1 As Required 1 1 1 1 1 1 As Required 1 1 1 1 1 1 As Required
9.	**Design and analysis of Half wave and Full Wave rectifiers** 1. Diodes (Si-1N4007) – 4 2. Resistor 1KΩ 3. Capacitor 100μF 4. Digital Multimeter 5. CRO 6. Transformer (6-0-6)V 7. Bread Board 8. Connecting Wires	 1 1 1 1 1 1 1 As Required
10.	**Measurement of displacement of LVDT** 1. LVDT Kit 2. Multimeter	 1 1

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – III

Course Code: PT 3311
Course Title: Chemical Engineering Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 30 students)
1	Ball Mill	1
2	Sieve Shaker and Sieves	1
3	Jaw crusher	1
4	Venturimeter	1
5	Orifice meter	1
6	Simple and steam distillation unit	1
7	Air compressor	1
8	Thermal conductivity apparatus	1
9	Packed bed and fluidized bed column	1
10	Heat Exchanger	1
11	Stefan-Boltzmann apparatus	1
12	Rotameter	1
13	Particle size analyser	1

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – III

Course Code: PT 3312
Course Title: Polymer Chemistry Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 30 students)
1	**Glasswares -** Spatula, dropper, Funnel, Glass rod, Beaker, Polymerization Tube, 3 neck RB flask, Round bottom flask, Liebig Condenser, Measuring cylinder	10 sets

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – IV

Course Code: PT 3411
Course Title: Polymer Science Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 30 students)
1	**Glasswares -** Spatula, dropper, Funnel, Glass rod, China dish, Beaker, Ignition tube, Polymerization Tube, 3 neck RB flask, Liebig Condenser, Burette, Pipette, Conical flask, Standard measuring flask, Measuring cylinder	15 Nos

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – IV

Course Code: PT 3412
Course Title: Plastics Processing Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 25 students)
1	Hand operated Injection Moulding Machine	1
2	Injection Moulding Semi-Automatic	1
3	Injection Moulding M/c.- Automatic	1
4	Compression moulding Hand Operated	1
5	Semi -Automatic Compression & Transfer Moulding	1
6	Scrap Grinding	1
7	Extruder - film, tube, etc	1
8	Blow Moulding - Hand Operated	1
9	Blow-Moulding Semi-Automatic	1
10	Machine maintenance kit	1
11	Moulds maintenance kit	2
12	Moulds for plastic products	1

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – V

Course Code: PT 3511
Course Title: Plastics Testing and characterization Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 25 students)
1	Muffle furnace	1
2	Melt flow Index Tester	1
3	For specimen Preparation 1. Injection molding machine 2. Compression molding machine 3. Two roll mill 4. Contour cutter 5. Scrap grinder 6. Blender	Each 1
4	Universal testing machine	1
5	Shore A and Shore D Hardness tester	Each 1
6	Barcol Hardness tester	1
7	Rockwell Hardness Tester	1
8	Impact Tester (Izod/Charpy)	1
9	Dart Impact tester	1
10	Volume and Surface resistivity	1
11	Dielectric strength	1
12	Comparative Tracking Index Tester	1
13	Arc Resistance	1
14	HDT/VSP tester	1
15	Abrader	1
16	Pycnometer	1
17	Moisture analyser	1
18	FTIR	1
19	GPC	1
20	TGA	1

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – VI

Course Code: PT 3611
Course Title: Plastics Product Testing Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 25 students)
1	Drop Impact tester	1
2	Hydrostatic pressure testing machine	1
3	Dart Impact Tester	1
4	Universal testing machine	1

Faculty of Technology

B.Tech Plastics Technology (R 2021)

Semester – VII

Course Code: PT 3711
Course Title: CAD/CAM/CAE Laboratory

Sl. No.	Description of Equipment/Apparatus	Required numbers (for a batch of 25 students)
1.	Computers with CAD, CAM and Mold flow Analysis Software	25