

Faculty of Mechanical Engineering

B.E. Safety and Fire Engineering

(R 2021) Semester – II

Course Code: BE3271 Course Title: Basic Electrical and Electronics Engineering Laboratory		
Sl. No.	Description of Equipment	Required numbers (for batch of 30 students)
1.	Verification of ohms and Kirchoff's Laws 1. DC Regulated Power supply (0 - 30 V variable) 2. Bread Board 3. Resistors 4. Multimeter 5. Connecting wires	1 1 As per circuit Diagram 1 As Required
2.	Load test on DC Shunt Motor 1. Ammeter MC (0-20A) 2. Voltmeter MC (0-300)V 3. Rheostat 7.5 Ω, 10 A 4. Tachometer 5. Field Rheostat 175 Ω, 1.5 A 6. Connecting wires	1 1 1 1 1 As Required
3.	Load test on Self Excited DC Generator 1. DC shunt generator(0- 300V) 2. Ammeter (0-30 A), (0-2A) 3. Voltmeter (0-30V) 4. Rheostat 175Ω, 250 Ω 5. Tachometer 6. Connecting Wires	1 1 1 1 1 As Required
4.	Load Test on Induction Motor 1. Ammeter MI (0-20A) 2. Voltmeter MI (0-300)V 3. Wattmeter – 300V, 30 A 4. Tachometer – Digital 5. Connecting Wires – As Required 6. Single phase Induction motor	1 1 1 1 As Required 1
5.	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
6.	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	1 1 1 1 1 As Required

	<p>Characteristics of SCR</p> <ol style="list-style-type: none"> 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 <p>Characteristics of MOSFET</p> <ol style="list-style-type: none"> 1. MOSFET (2N7000) 2. Bread board 3. resistor (1KΩ, 100KΩ) 4. DC power supply (0-30V) 5. Multimeter 6. Bread board 7. Connecting Wires 	<p>1 1 1 1 1 1 As Required</p> <p>1 1 1 1 1 1 As Required</p>
7.	<p>Half wave and Full Wave rectifiers</p> <ol style="list-style-type: none"> 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 	<p>1 1 1 1 1 1 1 As Required</p>
8.	<p>Study of Logic Gates</p> <ol style="list-style-type: none"> 1. IC 7400, 7402, 7404,7408,7432,7486 2. Digital IC trainer 3. Patch chords 	<p>1 1 As Required</p>
9.	<p>Implementation of Binary Adder and Subtractor</p> <ol style="list-style-type: none"> 1. AND Gate IC 7408 2. X-OR Gate IC 7486 3. NOT Gate IC 7404 4. OR Gate IC 7432 5.. IC Trainer Kit 6. Patch Chords 	<p>1 1 1 1 1 As Required</p>

Faculty of Mechanical Engineering**B.E. Safety and Fire Engineering****(R 2021) Semester – III****SF3311 ELECTRICAL TECHNOLOGY LABORATORY**

SL.No.	Description of Equipment	Required numbers
1.	Oscilloscope (0-30 MHz).	2
2.	Regulated Power Supply: 0 - 15 V D.C	5
3.	Circuit Connection Boards	10
4.	Ammeter(0-5/10A)MI	3
	Voltmeter (0-300/600V)MI	3
	Resistive load	1KW
5.	DC series motor	1
	Voltmeter (0-300V)MC	1
	Ammeter(0-20A)MC	1
6.	DC Shunt motor	1
	Rheostat 110ohm/5A,230 ohm/2A	1(each)
	Voltmeter(0-300V)MC	1
	Ammeter(0-5/10A)MC	1
	Ammeter(0-1/2A)MC	1
7.	Single phase 2KVA Transformer	1
	Ammeter(0-10A) MI	2
	Ammeter(0-2A) MI	1
	Single phase Variac	1
	Wattmeter 300/600V,10A UPF	2
	Wattmeter 150/300V,5A LPF	1
	Voltmeter(0-300V) MI	1
8.	Three phase AC Induction motor	1
	Voltmeter(0-600V)MI	1
9.	MCB 230V,5A	1
10.	Megger	1
11.	Resistors, Capacitors and inductors	50
12.	Function Generators	2

Faculty of Mechanical Engineering

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(R 2021) Semester – IV

SF3411 INDUSTRIAL HYGIENE LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1.	Safety helmet, belt, hand gloves, goggles, safety shoe, gum boots, ankle shoes, face shield, nose mask, ear plug, ear muff, apron and leg guard.	Each 04
	SafetyFilmsinDVD	1
2.	Personal air sampler, ElectrostaticAirSampler	Any 1
3.	High volume sampler	1
4.	SoundLevelMeter	1
5.	SoundSurveyMeter, Audio meter	Any 1
6.	IlluminationLevelMeter	1
7.	EyeVisionTester	1
8.	B.P.Equipment, ClinicalThermometer	Each 01
9.	Thermogravimetric Analysis (TGA) / Differential Scanning Calorimetry (DSC) for Thermal stress	Any 1

Faculty of Mechanical Engineering

B.E. Safety and Fire Engineering

(R 2021) Semester – V

SF3511 COMPUTER AIDED DESIGN LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	Computer	30 Nos
2	Drafting Modelling Software	30 Nos
3	Printer	01 No

Faculty of Mechanical Engineering

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(R 2021) Semester – VI

SF3611 UNIT OPERATIONS LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	Ball Mill	1
2	Sieve Shaker	1
3	Plate and Frame Filter Press	1
4	Sedimentation Unit	1
5	Simple Distillation Unit	1
6	Steam Distillation Unit	1
7	Batch Reactor	1
8	Leaf Filter	1

Faculty of Mechanical Engineering
B.E. Safety and Fire Engineering
(R 2021) Semester – VII
SF3712 FIRE ENGINEERING LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	Flash point tester	1
2	Fire point tester	1
3	Pour point tester	1
4	Fire Extinguishing system	1
5	Fire Suppression system	1
6	Foam Testing Equipment	1
7	Non- combustible test apparatus	1