Faculty of Mechanical Engineering

B.E. Industrial 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 Kirchhoff'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

	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 1 As Required 1 1 1 1 1 1 As Required
7.	**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
8.	**Study of Logic Gates** 1. IC 7400, 7402, 7404,7408,7432,7486 2. Digital IC trainer 3. Patch chords	 1 1 As Required
9.	**Implementation of Binary Adder and Subtractor** 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	 1 1 1 1 1 As Required

Faculty of Mechanical Engineering

B.E. Industrial Engineering

(R 2021) Semester – III

CE3481 STRENGTH OF MATERIALS AND FLUID MACHINERY LABORATORY

LIST OF EQUIPMENTS FOR A BATCH OF 30 STUDENTS

Sl. No.	Name of the Equipment	Required numbers
1	Venturimeter setup	1 No.
2	Friction Apparatus setup	1 No.
3	Metacentric Height apparatus setup	1 No.
4	Impact of jet setup	1 No.
5	Centrifugal pump set up	1 No.
6	Reciprocation pump set up	1 No.
7	Pelton Wheel turbine set up	1 No.
8	Stop watch	15 No.
9	IM wooden seal	15 Nos.
10	Tachometer	1 No.

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(R 2021) Semester – III

ME3382 MANUFACTURING TECHNOLOGY LABORATORY

LIST OF EQUIPMENT FOR BATCH OF 30 STUDENTS

S.No.	NAME OF THE EQUIPMENT	Required numbers
1.	Centre Lathes	7 Nos.
2.	Shaper	1 No.
3.	Horizontal Milling Machine	1 No.
4.	Vertical Milling Machine	1 No.
5.	Surface Grinding Machine	1 No.
6.	Cylindrical Grinding Machine	1 No.
7.	Radial Drilling Machine	1 No.
8.	Lathe Tool Dynamometer	1 No.
9.	Milling Tool Dynamometer	1 No.
10.	Gear Hobbing Machine	1 No.
11.	Gear Shaping Machine	1 No.
12.	Arc welding transformer with cables and holders	2 Nos.
13.	Oxygen and Acetylene gas cylinders, blow pipe and other welding outfit	1 No.
14.	Moulding table, Moulding equipments	2 Nos.

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B.E. Industrial Engineering

(R 2021) Semester – IV

IE3411 WORK SYSTEM DESIGN LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	PEG BOARD & PEGS (PEG BOARD EXPERIMENT)	2 SETS
2	STOP WATCH (PERFORMANCE RATING EXERCISE)	5 SETS
3	PLAYING CARDS (CARD DEALING)	2 SETS
4	NUT, BOLT & WASHERS (MTM PRACTICE)	2 SETS
5	ASSEMBLY BENCH (MTM PRACTICE)	1 SET

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(R 2021) Semester – IV

IE3461 OPTIMIZATION LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	SOFTWARE PACKAGE RELATED TO OPTIMIZATION LABORATORY	1

Faculty of Mechanical Engineering

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(R 2021) Semester – V

ME3381 COMPUTER AIDED MACHINE DRAWING

Sl.No.	Description of Equipment	Required Numbers
1.	Intel Octa core i9 processor	6 GHz, 16 GB Ram, 600 s8D HD- 50
2.	Windows 11	50 S7D Acad License
3.	Creo 9.0	
4.	Solid Works 2023	
5.	Autodesk Inventor 2023.1.1	
6.	Auto CAD 2023	

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(R 2021) Semester – V

IE3511 ERGONOMICS LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1.	METRONEME	2 SETS
2.	STEP BENCH	2 SETS
3.	NOISE METER	2 SETS
4.	LUX METER	2 SETS
5.	MEASURING TAPE	2 SETS
6.	STOPWATCH	2 SETS
7.	TREAD MILL (EFFECT OF SPEED OF WALKING ON TREAD MILL USING HEART RATE AND ENERGY EXPENDITURE)	2 SETS
8.	ERGO CYCLE (EFFECT OF WORKLOAD ON HEART RATE USING ERGO CYCLE)	1 SET
9.	ERGO CYCLE(EFFECT OF WORKLOAD ON HEART RATE USING ERGO CYCLE)	1 SET

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(R 2021) Semester – VI

IE3611 AUTOMATION LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1.	CNC LATHE	1 SET
2.	CNC MILLING	1 SET
3.	MINI ROBOT	2 SETS
4.	PLC	2 SETS

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B.E. Industrial Engineering

(R 2021) Semester – VII

IE3781 SYSTEMS SIMULATION LABORATORY

Sl.No.	Description of Equipment	Required Numbers
1	SOFTWARE PACKAGE RELATED TO SIMULATION SOFTWARE	1