Faculty of Technology

B. Tech. Petroleum Engineering

(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) 2. Bread Board 3. Resistors 4. Multimeter 5. Connecting wires	 1 1 As per Circuit diagram 1 As Required
2.	**Three Phase Power Measurement** 1. Three Phase Variable Load, 2. Ammeters 0-10 A, MI, 3. Wattmeters 0-5 A, 300V, **4.** Voltmeter 0-300v,MI **5.** Connecting wires	 1 2 2 1 As Required
3.	**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
4.	**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
5.	**Load test on Single phase Transformer** 1. Ammeter (0-30) A, (0-5) A 2. Voltmeter (0-150)V, (0-300)V 3. Wattmeter – 300V, 5A, UPF 4. Autotransformer **5.** Single phase Transformer **6.** Connecting Wires	 **1** **1** **1** **1** **1** As Required
6.	**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 6. Single phase Induction motor	 1 1 1 1 As Required 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 1 As Required 1 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

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(R 2021) Semester – III

PE3361 Fluid Mechanics And Solid Operations

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Venturi meter	1
2.	Orifice meter	1
3.	Rotameter	1
4.	Weir	1
5.	Open drum with orifice	1
6.	Pipes and fittings	1
7.	Helical and spiral coils	1
8.	Centrifugal pump	1
9.	Packed column	1
10.	Fluidized bed	1
11.	Sieve shaker	1
12.	Leaf filter	1
13.	Plate and Frame Filter	1
14.	Batch Sedimentation	1
15.	Jaw Crusher	1
16.	Ball mill	1
17.	Cyclone separator	1
18.	Roll Crusher	1
19.	Drop weight crusher	1
20.	Sieves	Set of 5

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(R 2021) Semester – III

PE3411 Petroleum Testing Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Redwood / Saybolt / Engler viscometer	1
2.	Conradson Apparatus	1
3.	Muffle furnace	1
4.	Hydrometer	1
5.	Aniline point apparatus	1
6.	Copper corrosion Apparatus	1
7.	Freezing / Cloud / Pour point apparatus	1
8.	Junkers Gas Calorimeter / Bomb Calorimeter	1
9.	Cleveland / PenskyMartien open and closed cup Flash and fire point Apparatus	1
10.	API Distillation Apparatus	1
11.	Abbey Refractometer	1
12.	Dean and Stark apparatus	1
13.	Karl –Fisher Apparatus	1
14.	Softening point apparatus	1
15.	Ductilometer	1
16.	Penetrometer	1

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(R 2021) Semester – III

PE3311 Geology And Surveying Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Sieve Shakers	2
2.	Sieves set	Minimum 2 Set
3.	Petrological Microscopes	2
4.	Hot even	1
5.	1000 ml and 50 ml beakers	15

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(R 2021) Semester – IV

PE3481 Heat Transfer Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Double Pipe Heat Exchanger	1
2.	Shell and Tube heat exchanger	1
3.	Bare and Finned Tube Heat Exchanger	1
4.	Composite wall set up	1
5.	Natural convection set up or Forced convection set up	1
6.	Stefan Boltzmann Apparatus	1
7.	Emissivity measurement set up	1
8.	Open Pan Evaporator	1
9.	Single effect evaporator or Multiple effect evaporator	1
10.	Boiler	1Compulsory equipment
11.	Packed Bed	1
12.	Vertical Condenser or Horizontal Condenser	1
13.	Helical Coil	1
14.	Agitated Vessel	1
15.	Jacketed vessel	1

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(R 2021) Semester – V

PE3511 Drilling Fluids And Cementing Techniques

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Mud balance	1
2.	Picnometer and F.G.T meter	1
3.	Atmospheric Filter press.	1
4.	pH meter	1
5.	Compact Curing chamber	1
6.	Fann viscometer	1
7.	cement compressive strength testing machine	1
8.	Hamilton Beach Mixer	1

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(R 2021) Semester – VI

PE3611 Process Control And Instrumentation

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	U tube manometer with controller	1
2.	Interacting Tank	1
3.	Non Interacting Tank	1
4.	Open loop control system	1
5.	Closed loop control system	1
6.	ON/OFF controller	1
7.	Control valve characteristics	1
8.	Pressure Tuner	1
9.	Temperature Tuner	1
10.	Proportional Controller	1
11.	Flow Transmitter	1
12.	Level Transmitter	1
13.	Cascade control system	1

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(R 2021) Semester – VI

PE3612 Oil Field Equipment Design And Drawing

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Intel Dual Core computer or better hardware with suitable graphics facility	15
2.	Licensed software for Drafting and Modeling Licenses.	15
3.	Laser Printer or Plotter to print / Plot drawings.	2

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(R 2021) Semester – V

PE3512 Computational Petroleum Engineering

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	computers with Mcrosoft , Matlab Software, **PROCESS SIMULATION SOFTWARE TOOL for the given Experiment**	15