

Faculty of Technology
B. Tech. Petrochemical 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 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.	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 175 Ω , 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.	<p>Characteristics of PN and Zener Diodes</p> <ol style="list-style-type: none"> 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 	<p>1 1 1 1 1 As Required</p>
8.	<p>Characteristics of BJT</p> <ol style="list-style-type: none"> 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 <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 As Required</p> <p>1 1 1 1 1 1 As Required</p> <p>1 1 1 1 1 As Required</p>
9.	<p>Design and analysis of 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>
10.	<p>Measurement of displacement of LVDT</p> <ol style="list-style-type: none"> 1. LVDT Kit 2. Multimeter 	<p>1 1</p>

Faculty of Technology
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(R 2021) Semester – III
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

Faculty of Technology
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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.	Sieve shaker	1
2.	Leaf filter	1
3.	Plate and Frame Filter press	1
4.	Batch Sedimentation	1
5.	Jaw Crusher	1
6.	Ball mill	1
7.	Cyclone separator	1
8.	Roll Crusher	1
9.	Drop weight crusher	1
10.	Drag on experiment setup	1
11.	Effectiveness of screen	1
12.	Screens	5 sets
13.	Centrifugal pump	1
14.	Packed column	1
15.	Fluidized bed	1

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B. Tech. Petrochemical Technology
(R 2021) Semester – IV

PC3461 Petrochemical And Polymer Analysis Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Refractometer	1
2.	Cleveland Open cup Flash and fire point apparatus	1
3.	Pensky Martien Flash and fire point apparatus	1
4.	Redwood Viscometer	1
5.	Saybolt Viscometer	1
6.	KF-Titrator	1
7.	Rotary vacuum evaporator.	1
8.	UV- Visible spectrophotometer/FTIR.	1
9.	Gas Chromatography with MS/NMR with MS	1
10.	Sulphur content determination instrument	1
11.	Orsat apparatus/ Digital flue gas analyzer	1
12.	Durometer	1
13.	Melting point apparatus	1

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B. Tech. Petrochemical Technology
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PC3462 Petroleum Product Testing Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Hydrometer	1
2.	Conradson Apparatus / Muffle furnace	1
3.	Brook Field viscometer	1
4.	Dean and Stark apparatus	1
5.	ASTM Distillation apparatus	1
6.	Aniline point apparatus	1
7.	Copper corrosion apparatus	1
8.	Cloud and Pour point apparatus	1
9.	Smoke point apparatus	1
10.	Reid -Vapour pressure apparatus	1
11.	Centrifuge apparatus	1
12.	Drop point apparatus	1
13.	Ring and ball softening point apparatus	1
14.	Ductilometer	1
15.	Penetrometer	1
16.	Bomb calorimeter	1

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B. Tech. Petrochemical Technology
(R 2021) Semester – V
CH3561 Mass Transfer Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Simple distillation setup	1
2.	Steam distillation setup	1
3.	Packed column	1
4.	Liquid-liquid extractor	1
5.	Forced draft dryer	1
6.	Wetted wall column	1
7.	Rotating disc contactor	1
8.	Cooling tower	1
9.	Absorption column	1
10.	Diffusion Cell	1
11.	Surface Evaporation setup	1

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B. Tech. Petrochemical Technology
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PM3611 Chemical Reaction And Process Control

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
CHEMICAL REACTION LABORATORY		
1.	Batch Reactor	1
2.	Plug flow reactor	1
3.	CSTR	1
4.	Sono-chemical reactor	1
5.	Packed bed reactor	1
6.	PFR followed by a CSTR	1
PROCESS CONTROL LABORATORY		
7.	U tube Manometer with Controller	1
8.	Interacting / Non Interacting Tank	1
9.	Open loop Control System	1
10.	Closed loop Control System	1
11.	Control Valve Characteristics	1
12.	Flow/Level Transmitter	1

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PC3651 Computational Petrochemical Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	computers with Microsoft , Matlab Software, process simulation software tool for the given experiment	15