

<b>SEMESTER</b> <i>Second</i>	<b>DEPARTMENT</b> <i>General Engineering</i>	<b>COURSE TITLE</b> <i>Electrical Circuits II</i>
<b>COURSE CODE</b> <i>EP208</i>	<b>HOURS: 3</b> <b>UNITS: 1</b>	<b>COURSE SPECIFICATIONS</b> <i>Practical Contents</i>

**1. The Current, Voltage, and Phase Relationship in RL, RC, and RLC Circuits:**

➤ Experimentally:

- Explain the current, voltage, and phase relationship in RL, RC, and RLC circuits connected in series.
- Explain the current, voltage, and phase relationship in RL, RC, and RLC circuits connected in parallel.
- Explain the method of measuring the phase angle between voltage and current using oscilloscope.
- Explain relationship between the complex quantities V, Z, and I (for resistive, inductive, and capacitive loads ).

**2. The Resonance Circuits:**

➤ Experimentally:

- Explain how voltmeters and ammeters can be connected in the circuit related to the loading effect of the instruments.
- Determine the Q of circuit.

**3. To Show the Method Utilized in Correcting the Power factor:**

➤ Experimentally explain the operation with different power factors (using synchronous machine demonstrator and verify the operation of a capacitor bank to change power factor ).

**4. Low Pass, High Pass, Band Pass and Band-Stop Filters -Design and Testing.**

**5. Three Phase Measurements (Voltage, Current and Power):**

➤ Excrementally

- Explain the operation of 3- phase balanced system.
- Demonstrate the connection of 3- phase circuits in different configurations of  $\Delta$  to Y forms between generator and load.
- Measure line and phase voltages in circuits.
- Learn to connect Watt-meters to measure power in three phase circuits.
- Demonstrate and measure transient voltage and currents using the oscilloscope.

**Reference :**

1. *Engineering Circuit Analysis*, William H. Hayt.
2. *Elements of Electrical Networks*; Dr. P. Narayana Reddy; Khanna Publishers Delhi