

**SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES  
(AUTONOMOUS): CHITTOOR  
DEPARTMENT of ELECTRONICS and COMMUNICATION ENGINEERING**

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**II Year B.Tech. I semester**

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**16ECE 214 ELECTRONIC DEVICES AND CIRCUITS LAB**

**Course Educational Objectives:**

- This Lab provides the students to get an electrical model for various semiconductor devices.
- Students can find and plot V<sub>I</sub> characteristics of all semiconductor devices.
- Student learns the practical applications of the devices.
- They can learn and implement the concept of the feedback and frequency response of the small signal amplifier

**PART A: Electronic Workshop Practice**

1. Identification, Specifications, Testing of R, L, C Components (Colour Codes), Potentiometers, Coils, Gang Condensers, Relays, Bread Boards.
2. Identification, Specifications and Testing of active devices, Diodes, BJTs, JFETs, LEDs, LCDs, SCR, UJT.
3. Soldering Practice- Simple circuits using active and passive components.
4. Study and operation of Ammeters, Voltmeters, Transformers, Analog and Digital Multimeter, Function Generator, Regulated Power Supply and CRO.

**PART B: List of Experiments**

**(For Laboratory Examination-Minimum Ten Experiments)**

1. P-N Junction Diode Characteristics (Silicon and Germanium).
2. Zener Diode Characteristics as a Voltage Regulator.
3. Half-wave Rectifier (without and with filter).
4. Full-wave Rectifier (without and with filter).
5. BJT Characteristics (CE / CB Configuration).
6. FET Characteristics (Drain and Transfer).
7. SCR Characteristics.
8. UJT Characteristics.
9. Transistor Biasing.

**Equipment required for Laboratory**

1. Regulated Power supplies
2. Analog/Digital Storage Oscilloscopes
3. Analog/Digital Function Generators
4. Digital Multimeters
5. Decade Resistance Boxes/Rheostats
6. Decade Capacitance Boxes
7. Ammeters (Analog or Digital)
8. Voltmeters (Analog or Digital)
9. Active & Passive Electronic Components
10. Bread Boards
11. Connecting Wires

**.Course Outcomes:**

- ✓ Students able to learn electrical model for various semiconductor devices.
- ✓ Students can acquire practical knowledge and applications of the semiconductor devices.