PVP 22

## WIRELESS SENSOR NETWORKS AND ANTENNA LAB

**22ECMC2L1** **Credits: 2**
**Lecture: ---** **Internal assessment: 25 marks**
**Lab: 3 periods/week** **Semester end examination: 50 marks**

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**Prerequisites:** Microwave Engineering, Wireless Sensor Networks

**Course Outcomes:**

After the completion of this course, a student will be able to:

- Learn various parameters in microwave engineering and wireless sensor networks
- Analyze RF and microwave networks using various principles containing passive distributed components.
- Analyze the characteristic requirements of wireless sensor networks.
- Apply routing techniques to wireless sensor networks.

**Part A: (Any 5 experiments)**

**Antennas Experiments:**

1. Three Port Networks
2. Four-Port Networks
3. Microwave Solid State Devices and amplifiers
4. Electromagnetic Principles
5. Polarization Characteristics of microstrip antenna.
6. Radiation Characteristics of VHF and UHF antennas.

**Part B: (Any 5 experiments)**

**Wireless Sensor Networks Experiments:**

1. Distance between two nodes in WSN
2. Finding Shortest path between nodes
3. Node deployment
4. Node Localization
5. Fuzzy Inference System for WSN routing
6. Communication between the nodes for data transmission

### Learning Resources

**Text Book:**

1. Sisodia, M L, and G S. Raghuvanshi. Basic Microwave Techniques and Laboratory Manual. New York: Wiley, 1987
2. Holger Karl & Andreas Willig, "Protocols and Architectures for Wireless Sensor Networks", John Wiley, 2005.