

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
INNOVATIONS IN TEACHING LEARNING PRACTICES

Year/Sem : IV & VII
Dept of Course banded : ECE
Course Code : EC8702
Course Name : AD HOC AND WIRELESS SENSOR NETWORKS

S. No.	Name of the Activity	Details	Mapped COs, POs & PSOs	
1	Real time projects	Real-Time Packet Sniffing & Network Analysis	CO	CO1, CO2
			PO	PO1, PO2, PO3, PO4, PO5, PO11, PO12
			PSO	PSO1
2	PEER TO PEER LEARNING	Peer-to-Peer Learning Activity: Sensor Network Security Challenge	CO	CO4
			PO	P01, PO2, PO6, PO7, PO8, PO9, PO10, PO11, PO12
			PSO	PSO1

PROOF 1

Activity: Real-Time Packet Sniffing & Network Analysis

Objective: Learn how packets travel in wireless networks using Wireshark.

Steps:

- Install Wireshark.
- Connect to a Wi-Fi network and start capturing packets.
- Observe packet headers, IP addresses, and routing paths.
- Identify protocols used (UDP, TCP, ICMP, etc.).
- Discussion: Relate findings to WSN communication and security challenges (jamming, eavesdropping).

PROOF 1

Group Formation & Role Assignment

- Divide students into **groups of 4-5**.
- Assign each group a **specific layer-wise security attack** (jamming, tampering, black hole attack, flooding).
- Within each group, assign roles:
 - **Attack Analyst:** Explains how the assigned attack works.
 - **Impact Assessor:** Analyzes how it affects WSN security.
 - **Defender:** Suggests countermeasures and solutions.
 - **Security Strategist:** Explores reliability requirements and secure routing solutions (SPINS, key management)