Wireless Sensor Networks

Course Content:

1. **Introduction to WSN, History and Applications**
2. **Wireless Sensor Node Architecture:** System Level – Main Components with detailed description, Microcontroller, Communication(RF) Module, Sensors(depending on application) and signal conditioning, Memory, Power Supply, Battery, Management, Energy Harvesting.
3. **Wireless Sensor Network Architecture:** Topology/Network Structure, Power Management, Physical, MAC, Routing, IEEE 802.15.4 Standard and ZigBee, Synchronization, Localization, Data Aggregation and Data Base Management
4. **Sensor Network Platforms and Testbeds:** Operating Systems – Tiny OS, Contiki, Hardware Testbeds – Libelium WASP Motes, Crossbow Motes, Weather Monitoring Systems and eKo Motes
5. **System Level discussion on Specific Applications:** Environment Monitoring, Green Buildings, Smart Micro Grids, Green ICI, Health Care -BAN

Projects:

S.NO	Name	Roll Number	Title of the Project
1	Ch Trivikram	EE10M12	Synchronisation Techniques for WSN
2	R Sai Chandra Teja	EE10M06	Signal Conditioning for Sensors
3	S Pradeep Reddy	EE10M10	Head Control System Based on Gyro and Opto Sensors
4	V S S Praneet Varma G	EE10M13	Energy Efficient Target Tracking
5	M Sudhakar	EE10M04	Optimal Energy Based Clusturing with GPS Enabled Sensor Nodes
6	R Vijay Kumar	EE10M07	WSN in Precise Aggriculture Irrigation
7	MD Jamal	EE10M03	Wireless Sensor Network for Health Care
8	D S Srikanth Reddy	EE10M02	WSN based Vehicle Anti-Theft System
9	P Harish Babu	EE10M05	Automatic Speed Control and Centre Locking System
10	Ram Parvesh Kumar	EE10M14	A Web Service Based Gateway Architecture for WSN
11	B Raja Kullaya Reddy	EE10M01	Wireless Security Control System for Smoke and Fire Detection
12	Shenu P M	EE10M11	Data Analysis & Security Schemes for

			Wireless Sensor Networks
13	Karthika Vijayan	EE10P011	Data Compression Schemes for WSN
14	Shambavi V B	EE10M09	SOC Design of Low-Power Wireless Sensor Node
15	Revati A L	EE10M08	Optical Wireless Communication for Underwater WSN
16	Thejaswini M	EE10P003	Computational Geometry for WSN's
17	V Kiran Kumar	EE10P012	Outage and ber of WSN in presence of correlated interferers
18	B Sridhar	EE10P010	Cooperative Boundary Detection for Spectrum Spacing Using Dedicated Wireless Sensor Networks
19	Naveen Kumar Saini	EE10P013	Energey Detection for Spectrum Sensing in Cognitive Radio Sensor Network over Fading Channels
20	Aneesh Sharma		Capacitive MEMS Sensors