Wireless Networks

ECE 6102

Credit Hours:
3.00 - 3.00

Course Levels:
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Design principles and communication algorithms for wireless networks with a focus on MAC and routing protocols, scheduling algorithms, power control, and scaling properties.

Course Goals / Objectives:
- Be fluent in fundamentals of scheduling, rate allocation, power control, and scaling laws in wireless networks
- Learn MAC and routing protocols for single and multi-hop networks, and cross-layer design principles
- Improve their communication skills through presenting the state-of-the-art papers in class and writing research-oriented term papers
- Be trained in independent or team research to formulate and solve a real-life networking problem through their research-oriented term projects

Course Topics:
- Wireless communication basics, propagation, and the wireless channel
- MAC layer design and scheduling
- Rate allocation and power control
- Cellular design and channel allocation
- Routing in multi-hop wireless networks
- Scaling Laws for multi-hop networks
- Cross layer design

Designation:
Elective