Course Code	ECE538/CSE538
Course Name	Wireless Networks
Credits	4
Course Offered to	UG/PG
Course Description	This course will cover a variety of mobile systems (wireless LANs, cellular systems, and sensor networks). This course will cover design of various layers in the network stack in the context of wireless communication. This course will cover challenges in mobile systems.

Pre-requisites

Pre-requisite (Mandatory)	Pre-requisite (Desirable)	Pre-requisite(other)
Computer Networks	Operating System	Advanced Programming

*Please insert more rows if required

CO1	**CO2**	**CO3**	**CO4**
Students are able to understand and classify various wireless and mobile system.	Students are able to explain the functionalities of various layers in the network stack in the context of wireless communication.	Students are able to design basic simulations and/or experiments involving a wireless network of nodes.	Students are able to explain and discuss routing and transport layer issues over wireless networks and challenges in mobile systems.

Weekly Lecture Plan

Week Number	**Lecture Topic**	**COs Met**	**Assignment/Labs/Tutorial/Demonstration**
1	Course overview, overview of wireless and mobile system	C01	
2	Wireless physical layer	C01, C02	
3,4	Wireless link layer: centralized and distributed MAC protocls	C01, C02, C03	
5	Wireless link layer: link adaptation and bit rate adaptation, error control	C01, C02, C03	
6	Link layer multicast, energy and security concern	C02	
7	New WiFi standard 802.11ax	C02	
8	Millimeter Wave	C02	
9	Network layer: mobility management, cellular handoff, Mobile IP	C02, C03	
10	Multihop networks: routing protocol, opportunistic routing	C01, C02, C03, C04	
11	Transport layer: TCP over wireless, mobility	C02, C03, C04	
12	Transport layer: Multipath TCP	C02, C03, C04	
13	Future of wireless systems	C01, C02, C04	

Weekly Lab Plan

Week Number	**Laboratory Exercise**	**COs Met**	**Platform (Hardware/Software)**

*Please insert more rows if required

Assessment Plan

Type of Evaluation	% Contribution in Grade
Assignment	15
Project	35
Quiz + class participation	10
Mid-sem	15
End-sem	25

*Please insert more row for other type of Evaluation

Resource Material

Type	**Title**
Reference	Mobile Communications (2nd ed.). Jochen Schiller.
Reference	Research papers