Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
INF474	Wireless and Mobile Networks	8	3	0	0	3	5

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Elective
Course Level	Bachelor Degree
Objective	The objective of this course is to provide theoretical and practical knowledge in the field of wireless and mobile network technologies. It aims to enable students to understand technologies such as Wi-Fi, Bluetooth, cellular networks, sensor networks, and Mobile IP, while gaining analytical skills in critical concepts such as security and Quality of Service (QoS).
Content	This course provides a comprehensive introduction to wireless and mobile network technologies. The fundamental principles of wireless communication, protocols, architectures, and standards are examined. The course focuses on topics including Wi-Fi, Bluetooth, Zigbee, cellular networks (from 1G to 5G), wireless sensor networks, Mobile IP, ad hoc networks, wireless network security, and quality management. Emphasis is placed on both theoretical knowledge and real-world applications.
References	- Jim Kurose, Wireless and Mobile Networks Course Notes, The Computer Networks Research Group, University of Massachusetts, - Jochen Schiller, Mobile Communications, 2nd Edition, Addison-Wesley, 2003. - Yi-Bing Lin & Imrich Chlamtac, Wireless and Mobile Network Architectures, Wiley, 2001. - William Stallings, Wireless Communications and Networks, Upper Saddle River, N.J: Prentice Hall, 2002.

Theory Topics

Week	Weekly Contents
1	Class overview
2	Introduction to Wireless networks
3	Characteristics of the wireless channel
4	Multiple access techniques
5	WiFi: the 802.11 Wireless LAN
6	The 5G Radio Access Network
7	Topics at the edge network
8	Software-i-zation, SDN, and SD-RAN
9	Midterm
10	The 5G Core network
11	Mobility
12	Wireless network security
13	Advanced topics, Open and Private 5G networks
14	Bluetooth, LEOS, IoT networks