Course Name	WIRELESS TECHNOLOGIES	Course Code	ITEC-353		
Credit Hours	3	Contact Hours	Lec	Lab	Total
			2	2	4
Offered as	☐ University Requirement ☐ College Requirement ☒ Program Requirement ☒ Core ☐ Elective ☒ ITEC ☐ COMP ☒ CNET				
Level	6	Prerequisite	ITEC251		

Course Description:

This course introduces the concept of wireless world through wireless networking and wireless communication to the students. The course presents the major wireless concepts like signals and transmission, access points, wireless routing, WLANs, speed spectrum, channel capacity (Nyquist bandwidth and Shanon Capacity formulas), FHSS, DSSS, OFDM, IR and Wireless standards. The course further takes the students in the depth of core wireless concepts like ad hoc networking. Wireless application protocols, Bluetooth and multiple access techniques (FDMA, TDMA and CDMA). Lately, the course covers the concepts of Microwave and Satellite based communication with the focus on service types and classification of orbits. In addition, the course highlights the 5G communication systems prospects and challenges.

Upon completion, the student will be able to:

- Have a thorough understanding of the fundamental principles and concepts of wireless communication.
- Explain various wireless standards, protocols, including Wi-Fi, Bluetooth, and cellular networks, and security requirements.
- Understand the basics of radio frequency (RF) technology and its applications in wireless communication.
- Develop skills in designing and implementing wireless networks for different environments.
- Apply security measures, and security best practices to protect wireless networks from threats and vulnerabilities.
- Integrate wireless technologies with existing wired network infrastructures.
- Explore emerging trends and technologies in wireless communication, such as 5G, IoT, and wireless sensor networks.

Assessment Methods	☒ Mid Term Exam	15%	☒ Assignment-1	10%	☒ Assignment-2	15%
	☒ Lab Internal	10%	☒ Final Lab Exam	10%	☒ Final Exam	40%

Text Books:

1. William Stalling, "Wireless Communications Networks and System, 1st Edition, 2015, Pearson, ISBN-13: 978-0133594171

References:

1. Clint Smith, "Wireless Networks", 3rd Edition, 2014, ISBN-13: 978-0071819831
2. Koushik Sinha, "Wireless Networks and Mobile Computing", 1st Edition, 2015, Chapman and Hall/CRC, ISBN-13: 978-1482227932