Course Name	INTERNET OF THINGS	Course Code	ITEC-456		
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	8	Prerequisite	ITEC353		

Course Description:

This course aims at preparing students to the IoT market in Saudi Arabia, given the increasing demand for engineers on this hot emerging area. The course presents the latest technologies, architecture, communication protocols and trends that are contributing to the evolution of the Internet-of-Things (IoT). It will provide an overview of IoT applications and its impact on the world economy. The course will also cover the technologies and cyber-physical platforms that transform the physical world into digital data thus allowing to connect physical things to the Internet. We will also cover networking and communication protocols that represent the major actors in the IoT ecosystem and the IoT streaming applications used in IoT will be reviewed. A major part of the course will deal with developing real-world applications prototypes for the Internet-of-Things from the sensor design to the end-user applications to solve existing problems in the society. At the end of this course, the student will be ready to enter the IoT market or making his/her own startup.

Upon successful completion of the course, the student will be able to:

- Understand the IoT systems, techniques, applications and IoT Evolution.
- Identify the IoT devises (sensors and actuators, etc.).
- Explain the architecture of WSN for different paradigms and describe the various IoT Topologies.
- Recognize the technologies associated with IoT connectivity
- Determine appropriate communication protocol for their IoT implementation in real-world solutions.
- Discuss the new paradigms, challenges, and the future of IoT.
- Design IoT-based framework or application in real-world context and situation.
- Commit to work independently and collaboratively in a small group

Assessment Methods	☒ Assignments	10%	☒ Mini-Project	15%	☒ Mid-Exam	15%
	☒ Lab Exam	20%	☒ Final Exam	40%		

Textbook:

- Introduction to IoT, by Sudip Misra, Anandarup Mukherjee, Arijit Roy ISBN: 9781108842952, Year 2021, Publisher : Cambridge University Press.
- Vlasios et al., Internet of Things: Technologies and Applications for a New Age of Intelligence, 2nd Edition, 2018. ISBN-9780128144367, Publisher : Academic Press.

References:

- Peter Waher, Learning Internet of Things, Packt Publications, ISBN:9781783553532, Year, 2015
- Gaston C. Hillar, Internet of Things with python, Packt Publications, ISBN: 9781785881381, Year 2016.