Philadelphia University

Faculty of Engineering - Department of Communication and Electronics Engineering - First Semester 2024/2025

Course Details:

Title: Internet of Things (612562)

Lecture Time: Sat, Mon : 08:15 – 09:05

Prerequisite: Computer Networks

Credit Hours: 3 credit hours (16 weeks per semester, approximately 44 contact hours)

Textbook: "Introduction to the Internet of Things". IREEDER project, Cyprus June 2021.
http://ireeder.ahu.edu.jo/medias/article/other/11/IREEDER%20D2.2%20Teaching%20Materials%20-%20Internet%20of%20Things%20Lecture%20Notes.pdf

References: Qusay F. Hassan, Internet of Things A to Z: Technologies and Applications, Edition: 1, 2018, John Wiley & Sons

Course Description: Internet in general and Internet of Things (IoTs): layers, protocols, packets, services, performance parameters of a packet network as well as applications such as web, peer-to-peer, sensor networks, and multimedia, transport services, mobile networking which includes roaming and handoffs, mobile IP, and infrastructure-less networks, IoT definitions, IoT examples.

Website: Through Moodle platform

Instructor: Dr.Nasser Dardas
Email: ndardas@philadelphia.edu.jo nq2600@gmail.com
Office hour:
Sat, Mon : 09:10 – 10:10

Course Topics:

Topic	# Weeks
Overview of the IoT	1
Revision of Basic Programming and IoT IDE	1
Software Development for IoT Embedded Systems	1
IoT architecture and components	2
IoT Microcontrollers, Sensors for Data Acquisition and Actuators	1
IoT Connectivity Technologies	2
IoT Connectivity Protocols	1
Data Storage and Cloud Systems	1
Data Analytics and Applications	1
IoT Security and security standards	1
Ethics in IoT Networks and Applications	1
Key-Enabling Technologies and Applications in IoT	1
Total	15

Course Learning Outcomes with reference to ABET Outcomes:

Upon successful completion of this course, the student should:

1	Understand the definitions, operating principles, components and use of IoT Systems
2	Demonstrate advanced knowledge about the architecture, the key technologies and protocols/standards used in IoT Systems.
3	Analyse and effectively use available frameworks/platforms to design, program, and implement IoT systems.
4	Explore the relationship between IoT, cloud computing, and big data and be able to identify necessary security measures.
5	Appraise the applicability of IoT in various engineering/business contexts and discuss future challenges of IoT in various sectors.

Assessment Guidelines:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Exams: The students will take a scheduled midterm written exam during the semester. The midterm will cover material given in lectures in the previous 6-7 weeks.

Quizzes: Quizzes of (10-15) minutes will be conducted during the semester.

Homework: Homework problems will be given to students. Homework should be solved individually and submitted before the due date.

Cheating by copying homework or project from others is strictly forbidden and punishable by awarding the work with zero mark.

In Class Participation: Discussions will be carried out during lectures. Individual students will be assessed accordingly.

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading Policy:

Midterm	30%
Quizzes, Homework, Class Discussions	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

October, 2024