

Keysight Technologies

IoT Design and Validation Industry-Ready Student Certification Program

Overview

IoT is an emerging technology that will define the future lifestyle. More interestingly, IoT does not only encompasses software such as apps and data analytics, but also the hardware to make everything work. Universities play major roles in equipping students with knowledge of tools and processes used in the industry today; producing industry-ready engineers who are highly employable. This program provides a collaboration between industry and universities to produce and recognize industry-ready engineers.

A key component of this certification program is the use of Keysight's IoT Applied Courseware. The Keysight IoT Design and Validation Industry-Ready Student Certification Program recognizes the student's comprehension of key IoT design, validation and measurement concepts. It signifies that the recipient has:

- Passed an IoT based university course augmented by at least one of Keysight Technologies' IoT Applied Courseware Module.
- Completed a required number of hours using the Keysight IoT kit to understand major IoT design concepts and considerations.
- Completed required experience in using Keysight instruments to make accurate measurements for the purpose of component level and system level design validation.
- Been nominated by their professor for certification.



Quick Facts

The Keysight IoT Design and Validation Industry-Ready Student Certification Program recognizes the student's comprehension of key IoT design, validation and measurement concepts.

Keysight Requirements for Universities

- The university must adopt Keysight's IoT Applied Courseware to be eligible to participate in the IoT Design and Validation Industry-Ready Student Certification Program.
- The university must ensure students complete all IoT lab assignments in a specific module of the Keysight's IoT Applied Courseware where certification is being pursued.

Qualification Process for Universities and Students

- University completes and submits Keysight IoT Design and Validation Industry-Ready Student Certification Program submission form.
- Keysight certifies that the university course and lab topics meet the program requirements.
- Keysight notifies university of acceptance.
- Students are notified of certification program by the course professor.
- At the end of the course/ labs, the Top 15% - 20% of students are eligible for certification.
- Class professor provides Keysight with names of students qualifying for certification based on class grade and quality of lab work.

Types of Certification

These are stand-alone certificates depending on the module completed by the students.

IoT System Design and Validation Fundamentals	Example
IoT's architecture, technologies and ecosystem understanding. Designing and developing an IoT-enabled embedded system.	ZigBee® Networks, Bluetooth® LE, WLAN, Cloud services, BigData, Analog and Digital sensors
Wireless Connectivity for IoT Frameworks	Example
Developing IoT applications with various types of wireless connectivity and evaluating RF performance.	ZigBee® signal analysis, LoRA signal analysis, Swept-tuned signal analysis, Analog and Digital modulation
Precision Power Measurement and MEMS Sensors for IoT	Example
Characterizing MEMS devices and measuring power consumption of IoT devices.	Shunt resistor, current clamp, I-V curves, solar energy harvesting principles, static and dynamic current consumption measurement, accelerometer, Gyroscope.



Course Requirements

Demonstrated knowledge and hands-on experience in the area listed below.

IoT System Design and Validation Fundamentals
Setting up a Keysight IoT development board
Basic software automation
Understanding common IoT data layer protocols
Understanding common IoT transport layer protocols, operating channels and frequencies
Introduction to commercially available Cloud services
Introduction to basic data visualization and analytics
Selecting the right sensors for the right application
Student project with IoT relevance

Wireless Connectivity for IoT Frameworks
Selecting the right transport layer protocol for the right application
Bluetooth® LE signal analysis
ZigBee® signal analysis
WiFi signal analysis
LoRA signal analysis
Radio emissions compliance
Equipment competency
Student project with IoT relevance

Precision Power Measurement and MEMS Sensors for IoT
Understanding your power budget
Power measurement fundamentals
Energy storage technology awareness
Dynamic and static current consumption measurements
Equipment competency
Selecting the right MEMS sensors for the right application
Student project with IoT relevance

Recognition from Keysight

- Students honored with this certification will have their names and education institutions published in Keysight's website.
- This identifies top students recognized with their technical expertise in the area of IoT design and validation; which demonstrates their value as industry-ready engineers.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

