

Welcome to Introduction to the Internet of Things and Embedded Systems



The explosive growth of the “Internet of Things” is changing our world and the rapid drop in price for typical IoT components is allowing people to innovate new designs and products at home. In this first class in the specialization you will learn the importance of IoT in society, the current components of typical IoT devices and trends for the future. IoT design considerations, constraints and interfacing between the physical world and your device will also be covered. You will also learn how to make design trade-offs between hardware and software. We'll also cover key components of networking to ensure that students understand how to connect their device to the Internet.

Course Learning Objectives

1. Define the term “Internet of Things”
2. State the technological trends which have led to IoT
3. Describe the impact of IoT on society
4. Define what an embedded system is in terms of its interface
5. Enumerate and describe the components of an embedded system
6. Describe the interactions of embedded systems with the physical world
7. Name the core hardware components most commonly used in IoT devices
8. Describe the interaction between software and hardware in an IoT device

9. Describe the role of an operating system to support software in an IoT device
10. Explain the use of networking and basic networking hardware
11. Describe the structure of the Internet
12. Describe the meaning of a “network protocol”
13. Explain MANETs and their relation to IoT