IEEE blended learning PROGRAM
Learn – Apply – Build

EMBEDDED COMPUTING FOR IOT SYSTEMS

About Course

The course covers the basic functionality of any embedded system. Since ARM has become a defacto standard used across almost all embedded systems, we've used ARM Cortex architecture to explain basic computing concepts important for Embedded systems. Learn to design and deliver low power devices

PRE -REQUISITES

- ✓ Basic understanding of C Language
- ✓ Basic knowledge in electronics is helpful but not mandatory
- ✓ No prior knowledge about the Internet of Things is required

Features

The course will provide you with an introduction to embedded systems, explain the ARM Cortex M4 Processor core architecture in details, build an understanding of Embedded programming basics in Assembly and finally cover Exceptions, Interrupts and low power design techniques.

Immersive eLearning
Online modules accessible anytime, anywhere

Hands on Labs
eLabs for hands on labs experience

Insightful analytics
Regular assessments to track your progress

WHAT IS THE OBJECTIVE OF THIS COURSE?

The course will provide you with an introduction to embedded systems, explain the ARM Cortex M4 Processor core architecture in details, build an understanding of Embedded programming basics in Assembly and finally cover Exceptions, Interrupts and low power design techniques.

WHO CAN JOIN THE COURSE?

The course can be taken up by:
Engineers working in the embedded domain with upto 5 years of experience.
IT professionals looking to make a switch to a more lucrative Embedded and IoT domain.
Engineering graduates looking to skill up in IoT.

WHY SHOULD YOU ENROLL?

To design and develop IoT node level based devices.
To work with ARM based microcontrollers.
To employ low power design techniques to build energy efficient IoT nodes.
Hands-on lab experience by executing the exercises on the hardware.

HOW WILL THIS COURSE HELP YOU?

The course will help you:
To Get introduced to Embedded Systems and their various components, benefits and attributes.
To Understand ARM architectures, processors and it's programmers' model.
To Understand Memory map, bit-band operations, Endianness and Reset sequence of ARM Cortex-M4 processor.
To use interrupts to design systems efficiently.

Syllabus

COURSE RUN-TIME: 30 HOURS

1. Introduction to Embedded Systems
2. ARM Cortex-M4 Processor Architecture - Part I
3. ARM Cortex-M4 Processor Architecture - Part II
4. Implementation of C Code in Assembly Language
5. Interrupts
6. Low Power Requirements

Industry Speaks

"The IOT course is a new step in the direction of training on the Embedded Computing and IOT related concepts. The course delivers on building key concepts and knowledge of the ARM Cortex M4 core architecture, high-level language to assembly language conversion, handling interrupts, and power management which are critical to designing a great embedded system."

Professor Dr Subramaniam Ganesan
Professor Electrical and Comp. Engineering Oakland University

OAKLAND UNIVERSITY