

INDUSTRIAL INTERNET OF THINGS - GRADUATE CERTIFICATE (ONLINE)

Computer Engineering / Embedded Systems Engineering

Computer engineering encompasses a wide range of topics surrounding this interaction between hardware and software. Computer engineers of the future will be versatile full-stack developers, comfortable with understanding the technical depths of software development while also possessing a wide knowledge of the underlying hardware implementations. The MSEE on Coursera curriculum in computer engineering emphasizes computer-aided verification and synthesis.

Embedded systems engineering is used in industries such as aerospace and defense, energy, industrial automation, health care, networking and communication, security, transportation and more. Embedded systems also drive the Internet of Things (IoT), enabling countless human-to-machine and machine-to-machine applications including home automation, security and more.

The MSEE on Coursera's Embedded Systems Engineering curriculum covers essential embedded technologies, synthesizes foundational principles, and directly applies them to current tools and trends. It is structured to provide you with a broad, versatile and highly competitive skill set. We emphasize practical, project-based learning across hardware and embedded software design that addresses numerous end markets, as well as multiple semiconductor technologies including sensors, controllers, programmable devices and development tools.

Program Policies

This CU Boulder on Coursera program does not align with standard campus policies. Please refer to the Online Programs (<https://catalog.colorado.edu/online/>) section of the catalog for more information.

Requirements

To earn a graduate certificate (9 credits), students must complete the required specializations (listed below).

Embedding Sensors and Motors Specialization

Code	Title	Credit Hours
ECEA 5340	Embedding Sensors and Motors: Sensors, Sensor Circuit Design	
ECEA 5341	Embedding Sensors and Motors: Motors, Motor Control Circuits	
ECEA 5342	Embedding Sensors and Motors: Pressure and Motion Sensors	
ECEA 5343	Embedding Sensors and Motors: Sensor Manufact, Process Ctrl	

Embedded Interface Design Specialization

Code	Title	Credit Hours
ECEA 5346	Embedded Interface Design: User Exp I/F Design for Emb Sys	
ECEA 5347	Embedded Interface Design: Rapid Prototyping Emb I/F Designs	
ECEA 5348	Embedded Interface Design: M2M, IoT I/F Design & Protocols	

Developing Industrial Internet of Things Specialization

Code	Title	Credit Hours
ECEA 5385	Industrial IoT Markets and Security	
ECEA 5386	Developing Industrial IoT: Proj Planning, Machine Learning	
ECEA 5387	Developing Industrial IoT: Modeling and Debugging Embed Sys	