

INTERACTIVE DEVICE DESIGN CERTIFICATE

Program Description

Have you ever had a great idea for an interactive product but you didn't know how to build it? If you have some programming knowledge and a desire to build devices, this hands-on certificate program will give you the applied foundation you need to take the next step.

Throughout this program, you will engage in several project builds using both Arduino and Raspberry Pi. After being guided through the foundations of electronics and computing to develop simple devices that respond to user input, you'll progress to creating complete devices that have complex functions, including networked communications that connect one device to another. As you build these interactive devices, you will also gain an understanding of how human users and devices can exchange information in a smooth, natural way. Whether you're involved in engineering, robotics, computer science, or product development, you'll come away from this program prepared to design more effective and sophisticated interaction between products and end users.

This program leverages open-source libraries and requires the purchase of a kit of electronic components and microcontrollers at a cost of around \$530. To be successful in the courses, you should have familiarity with programming, be technically savvy, and have an understanding of key computer science principles.

The courses in this certificate program are required to be completed in the order that they appear.

Key Takeaways

- Design, build, and debug a responsive device using a microcontroller-based electronic circuit that senses, computes, and displays
- Incorporate light, sound, and character displays into an interactive device
- Design and build interactive systems with an emphasis on novel inputs and data storage
- Prototype a standalone interactive device using motors that can be deployed into the physical world
- Expand input, computation, and output capabilities of an interactive device using Raspberry Pi
- Design a complex networked interactive system with rich sensing, computation, and output capabilities

What You'll Earn

- Interactive Device Design Certificate from Cornell Tech
- 60 Professional Development Hours 6 Continuing Education Units CEUs

Who Should Enroll

- Engineers
- Research and design professionals
- Product managers, designers and developers
- Software engineers
- Electronics hobbyists
- Designers/artists with the appropriate background

- Entrepreneurs
- Career starters

Total Investment

- 3 months to complete all the courses

How To Enroll

For more information and to enroll, please visit Interactive Device Design Certificate (<https://ecornell.cornell.edu/certificates/technology/interactive-device-design/>).

Courses

Code	Title	Hours
eCornell CTECH41	Designing a Simple Interactive System	0
eCornell CTECH41	Expanding Interactive Systems with Devices and Libraries	0
eCornell CTECH41	Designing Complex Sensing and Functions in Interactive Systems	0
eCornell CTECH41	Building Actuated Interactive Devices	0
eCornell CTECH41	Designing Advanced Interactive Devices	0