

IoT Fundamentals: IoT Security Course Resources

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Curriculum Overview

The Cisco Networking Academy's IoT Fundamentals curriculum provides students with a comprehensive understanding of the Internet of Things (IoT). It develops foundational skills using hands-on lab activities that stimulate the students in applying creative problem-solving and rapid prototyping in the interdisciplinary domain of electronics, networking, security, data analytics, and business. The student-centric approach translates into the student being able to ideate, design, prototype and present an IoT solution for an identified business or society need.

There are 4 instructor-led courses in the IoT Fundamentals curriculum: Connecting Things, IoT Security, Big Data & Analytics and Hackathon Playbook. Upon completion of each course, the end-of-course survey, and the end-of-course assessment, the student will receive a Certificate of Completion.

The IoT Security course teaches students “White Hat Hacker” skills to perform vulnerability and risk assessment, and research and recommend risk mitigation strategies for common security threats in IoT systems. These skills are highly relevant across IoT and other network architectures in order to discover cyber-security threats before the bad actors do.

Moreover, the new 1.1 version introduces a CTF-like IoT Security Game with 10 challenging missions. Students playing the game reinforce their cybersecurity skills, practice their communication and collaboration skills, and have fun in an end to end real world-like IoT system.

Equipment & Applications

All 4 courses in the IoT Fundamentals curriculum use the [Cisco Prototyping Lab](#) as the basis for their hands-on experience. The Prototyping Lab is a set of hardware and software components that enables students and instructors to learn about, to prototype, and to model various IoT, digitization and data analytics solutions.

Cisco Packet Tracer is also used across the curriculum to simulate IoT solutions.

Recommended Background for Students

IoT Security students assumes students have completed of Connecting Things and have knowledge equivalent of Networking Academy courses: Networking Essentials and Cybersecurity Essentials.

Instructor Training Requirements

Instructor Training is required for IoT Security. There are two options, [ITC Academy](#) classes and a self-paced Cisco Instructor Training course. See the [Instructor Training Approach document](#) for the details.

Institution Requirements

- A dedicated classroom with reliable Internet access.
- Aligned with an ASC.

Certification and Career Pathways

IoT Fundamentals models end-to-end IoT systems, providing a firm foundation for understanding larger, more complex solutions encountered as a professional. Its multidisciplinary approach teaches critical career skills for today's rapidly-changing IoT world. Career pathways can be as creative as your imagination, but we've identified a few opportunities below.

Career pathways include: network administration, IoT device management, security administration, business analytics, IoT data analyst, IoT product manager, digital security and privacy, and many more jobs that have yet to emerge!