PROFESSIONAL EDUCATION
Digital Programs

CYBERSECURITY: TECHNOLOGY, APPLICATION AND POLICY

COURSE TITLE: Cybersecurity: Technology, Application and Policy

COURSE DATES: ▸ **SEPT. 15 - OCT. 27, 2015** - Introductory Price: $545

▸ **NOV. 10 - DEC. 22, 2015 / JAN. 12 - FEB. 23, 2016** - Regular Price: $595

COURSE INFORMATION ONLINE: mitprofessionalx.mit.edu | **LOCATION:** Online

CEUs: 1.2 | **CONTACT:** ✉ mitprofessionalx@mit.edu

COURSE DESCRIPTION

This online program will explore fundamental technologies and applications in Cybersecurity. By examining security challenges in hardware, software, and cryptography, this program will introduce the latest research that can help organizations move from 'patch and pray' defenses to security 'by default'. In addition, this course will also use case studies to illustrate the impact of the emerging technologies and look at the policy implications impacting the field. The program will be taught by a team of world-renowned experts from the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL).

Individual sessions include:

- Hardware Architectures for Security
- Operating System Security
- Network Security and Protocol Design
- Secure Programming Languages
- Verifying Systems
- Public Key Cryptography
- Multi-party Computation, Secrecy Sharing, Distributed Trust
- Homomorphic and Functional Encryption
- The Landscape of Cyber Policy

In addition, case studies examining the following will be introduced:

- Bitlocker
- Resilient Software
- Web Security
- Mobile Phone Security

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MIT PROFESSIONAL EDUCATION

For 65 years MIT Professional Education has been providing a gateway to renowned MIT research, knowledge, and expertise for those engaged in science and technology worldwide, through advanced education courses designed for working professionals.

CSAIL

COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY (CSAIL)

The Computer Science and Artificial Intelligence Laboratory is the largest research laboratory at MIT and one of the world's most important centers of information technology research.

EARN A CERTIFICATE OF COMPLETION AND CEUS

Participants who successfully complete all course requirements are eligible to receive a Certificate of Completion and 1.2 CEUs.


Massachusetts Institute of Technology

This is to certify that
John Q. Professional

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has successfully completed
Cybersecurity

COURSE OVERVIEW

The course is held over six weeks and will provide the following:

- Five modules covering 14 topic areas with 12 hours of video
- Assessments to reinforce key learning concepts of each module
- Case studies
- Discussion Forums for participants to discuss thought provoking questions posed by the MIT faculty teaching the course; share, engage, and ideate with other participants
- Community Wiki for sharing additional resources, suggested readings, and related links

Participants will also take away:

- Course materials from all presentations
- 90 day access to the archived course (includes videos, discussion boards, content, and Wiki)

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PROGRAM DETAILS ARE SUBJECT TO CHANGE
REVISED: SEPTEMBER 14TH 2015

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MODULES, TOPICS, AND FACULTY

Module One: Introduction

- Course Introduction – Howard Shrobe
- Security Overview – Srini Devadas

Module Two: Systems Security

- Hardware Architectures for security – Howard Shrobe
- Operating System Security – Frans Kaashoek
- Network Security and Protocol Design – Dave Clark
- Verifying Systems – Adam Chlipala
- Secure Programming Languages – Armando Solar-Lezama

Module Three: Cryptography and Network Security

- Public Key Cryptography – Ron Rivest
- Multi-party Computation, Secret Sharing, Distributed Trust – Shafi Goldwasser
- Homomorphic and Functional Encryption – Vinod Vaikuntanathan

Module Four: Case Studies

- Bitlocker – Nickolai Zeldovich
- Resilient Software – Martin Rinard
- Web Security – Daniel Jackson
- Mobile Phone Security – Nickolai Zeldovich

Module Five: Policy

- The Landscape of Cyber Policy – Danny Weitzner

Daniela Rus | Director
MIT Computer Science and Artificial Intelligence Laboratory
FACULTY CO-DIRECTOR

Howard Shrobe | Principal Research Scientist
MIT Computer Science and Artificial Intelligence Laboratory
FACULTY CO-DIRECTOR

Adam Chlipala | Assistant Professor
MIT Computer Science and Artificial Intelligence Laboratory

David Clark | Senior Research Scientist
MIT Computer Science and Artificial Intelligence Laboratory

Srini Devadas | Professor
MIT Computer Science and Artificial Intelligence Laboratory

Shafi Goldwasser | Professor
MIT Computer Science and Artificial Intelligence Laboratory

Daniel Jackson | Professor
MIT Computer Science and Artificial Intelligence Laboratory

Frans Kaashoek | Professor
MIT Computer Science and Artificial Intelligence Laboratory

Martin Rinard | Professor
MIT Computer Science and Artificial Intelligence Laboratory

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