# Update of Cyber Defense Professional Science Master

# Option of the Master of Science in

# Cyber Security and Privacy (MS CSP)

The objective of the Cyber Defense Professional Science Master (PSM), an option of the MS CSP, is to create leaders with strong communication and management skills in addition to the strong technical knowledge in security and privacy of computer systems, networks and web applications. This PSM is designed for working professionals or students who already have acquired some professional experience. The Cyber Defense PSM is affiliated with the PSM National Office.

As part of the affiliation process with the PSM National Office, we have been required to make the MS project required for all PSM Cyber Defense students. To address this request, we made the changes highlighted below.

## Degree Program Requirements and Courses

A student in the MS CSP – Cyber Defense Option must satisfy the following distribution of requirements:

- 36 credits are required.
- All Cybersecurity Core courses are required (21 credits)
- The rest of 15 credits must be taken from the combined list of PTC (Professional and Technical Communications), Management, and Computing electives, with at least 3 credits, and no more than 6, from each of the 3 elective lists

Among the required Cybersecurity Core courses, the program includes an MS Project, CS 700B. These projects are part of a project course, supervised by a CS faculty member, and done in collaboration with industrial partners. These partners will propose projects, and they will co-supervise the students together with the instructor of the course. Students who have a job are allowed to work on projects from their companies, in which case their employer will be actively engaged in the project supervision. The projects will generally be done in teams of 3 students.

## Core Course Requirements — Credits

| | | Credits |
|---|---|---|
| CS 608 | Cryptography and Security | 3 |
| CS 645 | Security and Privacy in Computer Systems | 3 |
| CS 646 | Network Protocols Security | 3 |
| CS 647 | Counter Hacking Techniques | 3 |
| CS 656 / ECE 637 | Internet and Higher-Layer Protocols | 3 |
| CS 696 / ECE 638 | Network Management and Security | 3 |
| CS 700B | Master's Project | 3 |

## PTC (Professional and Technical Communications) Courses

| | | |
|---|---|---|
| PTC 601 | Advanced Professional and Technical Communication | 3 |
| PTC 624 | Professional and Technical Editing | 3 |
| PTC 628 | Analyzing Social Networks | 3 |
| PTC 632 | Content Management and Information Architecture | 3 |
| PTC 620 | Proposal Writing | 3 |
| PTC 622 | Working in Team: Collaborative and Interpersonal Communications | 3 |
| PTC 629 | Theory and Practice of Social Media | 3 |

## Management Courses

| | | |
|---|---|---|
| MGMT 641 | Global Project Management | 3 |
| MGMT 650 | Knowledge Management | 3 |
| EM 636 | Project Management | 3 |
| MGMT 682 | Business Research Methods | 3 |
| MGMT 688 | Legal and Ethical Issues | 3 |
| MGMT 691 | Network Management and Security | 3 |
| FIN 600 | Corporate Finance I | 3 |
| ACCT 615 | Management Accounting | 3 |

## Computing Courses

| | | |
|---|---|---|
| CS 610 | Data Structures and Algorithms | 3 |
| CS 630 | Operating System Design | 3 |
| CS 631 | Data Management System Design | 3 |
| CS 632 | Advanced Database Systems | 3 |
| CS 634 | Data Mining | 3 |
| CS 643 | Cloud Computing | 3 |
| CS 660 | Digital Watermarking | 3 |
| CS 673 | Software Design and Production Methodology | 3 |

| | | |
|---|---|---|
| CS 680 | Linux Kernel Programming | 3 |
| CS 708 | Advanced Data Security and Privacy | 3 |
| CS 755/ECE 782 | Security and Privacy in Wireless Networks | 3 |
| IS 680 | Information Systems Auditing | 3 |
| IS 681 | Computer Security Auditing | 3 |
| IS 682 | Forensic Auditing for Computing Security | 3 |
| IT 620 | Wireless Network Security & Administration | 3 |
| IT 640 | Network Services Administration | 3 |
| ECE 636 | Computer Networking Laboratory | 3 |