## M.S. Program in Cybersecurity and Privacy (Thesis)-revised May 2025

The School of Computing at UGA has 7 faculty whose research areas are in cybersecurity and privacy. The School of Computing at UGA has established an Institute for Cybersecurity and Privacy (ICSP). The National Security Agency and Department of Homeland Security named the UGA Institute for Cybersecurity and Privacy a National Center of Academic Excellence in Cybersecurity Research.

**1) Program Description and Objectives**

This MS in Cybersecurity and Privacy program will be useful for all students, particularly in the fields of computer science, mathematics, and engineering. The program aims to develop expertise in various aspects of computer security and privacy, such as networking, operating systems, network and systems security, and data and communications privacy.

**2) Admission Criteria:**

Admissions requirements will align with the current admissions standards set by the Graduate School and the School of Computing. Completed applications will include the UGA graduate application, bachelor's degree from a regionally accredited institution in Computer Science or a related discipline, three letters of recommendation, statement of purpose, a minimum 3.0 GPA, and resume. Graduate Record Examination (GRE) test scores are optional for graduate CSCI programs. Applicants will need to meet all Graduate School requirements. Students with insufficient background in Computer Science must first take undergraduate Computer Science courses to remedy any deficiencies, in addition to their graduate program requirements. A sufficient background in Computer Science must include at least the following courses (or equivalents):

- CSCI 1301-1301L, Introduction to Computing and Programming (alternative option CSCI 7010, Computer Programming)
- CSCI 1302, Software Development
- CSCI 1730, Systems Programming
- CSCI 2610, Discrete Mathematics for Computer Science
- CSCI 2670, Introduction to Theory of Computing
- CSCI 2720, Data Structures
- MATH 2250, Calculus I for Science and Engineering

**3) Curriculum** (This program requires minimum 30 credit hours)

Required Courses (22-24 hours):

- CSCI 6250, Cyber Security (4 hours)
- CSCI 6260, Data Security and Privacy (4 hours)
- CSCI 6730, Operating Systems (4 hours)

- CSCI 6760, Computer Networks (4 hours)
- **CSCI 7000 Master's Research (3-4 hours)**
- **CSCI 7300 Master's Thesis (3-4 hours)**

Elective Courses 6-8 hours): Choose two (2) courses from:

- CSCI 6270, Introduction to Computer Forensics (4 hours)
- CSCI 8240, Software Security and Cyber Forensics (4 hours)
- CSCI 8245, Secure Programming (4 hours)
- CSCI 8250, Advanced Cyber Security (4 hours)
- CSCI 8260, Computer Network Attacks and Defenses (4 hours)
- CSCI 8265, Trustworthy Machine Learning (4 hours)
- CSEE 8310 Security in Cyber-Physical Systems (3 hours)
- CSCI 8960, Privacy-Preserving Data Analysis (4 hours)
- CSCI 8965, Internet of Things Security (4 hours)
- MATH 6450, Cryptology and Computational Number Theory (3 hours)
- MIST 7775 Cyberthreat Intelligence (3 hours)

To complete the program in MS Cybersecurity and Privacy (Thesis) students must complete 22-24 hours of required courses in Computer Science, including CSCI 7000 Master's Research and CSCI 7300 Master's Thesis. Students must also complete 6-8 hours of elective coursework related to Cybersecurity and Privacy, and CSCI 3030 or equivalent if they have not already taken a suitable ethics course. Overall, students must complete at least 12 credit hours of graduate-only coursework.

## 4) PROGRAM OF STUDY-MS Cybersecurity and Privacy-Thesis

| **Courses** *(list acronym, number, and title)* | **Semester** | **Hours** |
|---|---|---|
| **Required Courses** | | |
| CSCI 6250, Cyber Security | Spring | 4 |
| CSCI 6260, Data Security and Privacy | Fall | 4 |
| CSCI 6760, Computer Networks | Fall | 4 |
| CSCI 6730, Operating Systems | Spring | 4 |
| CSCI 7000, Master's Research | Fall | 4 |
| CSCI 7300, Master's Thesis | Spring/Summer | 3-4 |
| | | |
| **Elective Courses (Choose two courses)** | | |
| | | |
| CSCI 6270 Introduction to Computer Forensics | Spring | 4 |
| CSCI 8240, Software Security and Cyber Forensics | Spring | 4 |
| CSCI 8245, Secure Programming | Spring | 4 |
| CSCI 8250, Advanced Cyber Security | Spring | 4 |
| CSCI 8260, Computer Network Attacks and Defenses | Spring | 4 |
| CSCI 8265, Trustworthy Machine Learning | Spring | 4 |
| CSCI 8960, Privacy-Preserving Data Analysis | Spring | 4 |
| CSCI 8965, Internet of Things Security | Spring | 4 |
| CSEE 8310, Security in Cyber-Physical Systems | Spring | 3 |
| MATH 6450, Cryptology and Computational Number Theory | Spring | 3 |
| MIST 7775, Cyber Threat Intelligence | Spring | 3 |

*Course offerings will vary based on School of Computing Athena course schedule.*

Forms can be found https://grad.uga.edu/current-students/forms/. Courses will be listed in the order taken and must contain at least 12 semester hours of credit (exclusive of 7000 and 7300) in courses open to graduate students.

## 5.) Student Learning Outcomes:

a. Students in this program should be able to defend against common cybersecurity and privacy attacks by having knowledge of information security, including secure programming and known practices.

b. Students will be able to use their enhanced and improved hands-on experiences and skills to address various security and privacy issues.

c. Students should be able to make risk assessment to IT design decisions.

**Sample Program of Study**

| | Course Number | Course Title | Hours |
|---|---|---|---|
| **First Year Fall** | CSCI 6760<br>CSCI 6260<br>CSCI 6730 | Computer Networks<br>Data Security and Privacy<br>Operating Systems<br><br>Total Credit Hours | 4<br>4<br>4<br><br>12 |
| **First Year Spring** | CSCI 6250<br>CSCI 8260<br>CSCI 8960 | Computer Security<br>Computer Network Attacks and Defenses<br>Privacy-Preserving Data Analysis<br><br>Total Credit Hours | 4<br>4<br>4<br><br>12 |
| **Summer/Fall** | CSCI 7000<br><br>CSCI 7300 | Master's Research<br><br>Master's Thesis | 3<br><br>3 |
| **Total** | | | **30** |

*Course offerings will vary based on School of Computing Athena course schedule.*

**Advisory Committee (Thesis)**

Students in the Master of Science Cybersecurity and Privacy (Thesis) program require an advisory committee. The advisory committee will consist of one major professor and two additional members.. At least two of the three members must be from the School of Computing. Students in the thesis program will select their advisory committee members through the student Enrolled Student Progress Portal.

**Core Competency**

The required core courses are: CSCI: 6760,6730,6250,6260. Select MS Cybersecurity (Thesis) Core Competency form. Faculty approved form is uploaded to elC. Student is to provide an updated UGA transcript in eLC to review Core Competency and Program of Study forms.

Students who take the 4 required core courses, must achieve a grade average of at least 3.15 (e.g., B+, B+, B, B) on the MS Cybersecurity (Thesis) Core Competency Form.

Core competency is certified by the unanimous approval of the student's Advisory Committee, Major professor, as well as the approval by the Graduate Coordinator. The student's advisory committee manages the core competency in cooperation with the student. Students are required to meet the core competency requirement within their first three enrolled academic semesters (excluding summer semester). Core Competency Certification must be completed before approval of the Program of Study.

**Program of Study**

Forms can be found https://grad.uga.edu/current-students/forms/. Courses will be listed in the order taken and must contain at least 12 semester hours of credit (exclusive of 7000 and 7300) in courses open to graduate students. For Thesis students, a maximum of 6 semester of 7000 may apply to the minimum 30 semester hours. Minimum number of thesis hours (7300) is 3 semester hours.

**Graduation Requirements**

Before the end of the second semester in residence, a student must begin submitting forms to the Graduate School, through the Graduate Coordinator, including a Program of Study Form. The Program of Study Form indicates how and when degree requirements will be met and must be formulated in consultation with the student's Major Professor/Project Advisor. An Application for Graduation Form must also be submitted directly to the Graduate School.

Forms and Timing must be submitted as follows:

1. Core Competency Form-(Thesis) (Departmental) - beginning of third semester (upload to eLC with updated transcript)
2. Program of Study Form (G138) - semester before the student's last semester
3. Application for Graduation Form (in Athena) - beginning of last semester
4. Graduate Advisory Committee-(Enrolled Student Progress Portal)- to assign your Major professor.
5. MS Thesis Defense and Final Oral Exam Form (G140) (Thesis)-final semester).
6. Electronic Thesis and Dissertation (G129)-final semester.

See "Important Dates and Deadlines" on the Graduate School's website.