



Academic Year 2024-2025

**Master of Science in Information Security  
Policy and Management (MSISPM)  
Student Handbook Addendum**

**Updated 10/8/2024**

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# 1. Introduction

This handbook provides specific information on the curriculum and program requirements for the Master of Science in Information Security Policy and Management (MSISPM) program. The Heinz College also publishes a separate handbook which details College-wide policies and procedures pertaining to educational planning, program committee, teaching, scheduling and course credit, performance standards, academic standing, ethics and discipline, student privacy rights and major forms and deadlines.

While this handbook is specific to your academic experience in the department, it is just one element of the Graduate Student Handbook Suite. There are several other resources within the suite that you should consult when needed:

- [The Heinz College Handbook](#)
- [University-Wide Graduate Student Handbook](#) (Office of Graduate & Postdoctoral Affairs)
- [The Word Student Handbook](#)

# 2. MSISPM Mission Statement

Our **Master of Science in Information Security Policy and Management (MSISPM)** program **prepares future leaders** to **manage cybersecurity challenges** through a strategic vision, utilizing not only **technical defenses**, but also leveraging sound **risk management practices**, deploying **effective policy**, and creating innovative ways to make the organization more **resilient to threat and disruption**.

# 3. Department Personnel

Mr. Randall Trzeciak	Program Director of MSISPM; Deputy Director - Cyber Risk and Resilience, Software Engineering Institute (SEI)	randallt@cmu.edu	412-268-7040
Mr. Andrew Wasser	Associate Dean, School of Information Systems and Management	awasser@cmu.edu	412-268-7639
Ms. Jessi Znosko	Academic Advisor	jessi@cmu.edu	412-268-1618
Ms. Katie Cassarly	Senior Associate Director and Career Advisor to MSISPM	katiecassarly@cmu.edu	412-268-3055
Ms. Brittany Foster	Senior Academic Coordinator	brittanf@cmu.edu	412-268-2555

## 4. Curriculum

### 4.1. MSISPM Program Requirements

Students will complete the MSISPM program in four semesters, full-time, at the Pittsburgh, PA campus, taking 48 units per semester. The MSISPM curriculum is structured with required courses, security electives, and general electives.

In order to successfully complete the MSISPM program, students must complete the following:

- 192 units of course credit (minimum);
- all required courses (unless you exempt them);
- required summer internship (minimum 300 hours);
- capstone project (18 units) or independent thesis (24 units);
- 30 units of security elective courses;
- 24 units of general elective courses if pursuing the capstone project option or 18 units of general electives if you choose the thesis option; and
- all other standards for graduation, including meeting a minimum grade point average of 3.0.

### 4.2. Required Courses

The following table lists all the required core courses MSISPM students must complete.

<b>Course Number</b>	<b>Course Title</b>	<b>Units</b>
90-812	Python Programming I <sup>1</sup>	6
94-700	Organizational Design & Implementation	6
95-710	Economic Analysis	6
95-717	Writing for Information Systems Management <sup>2</sup>	6
95-752	Introduction to Information Security Management	12
95-760	Decision Making Under Uncertainty	6

<sup>1</sup> Students may choose to take 95-888 (Data Focused Python)

<sup>2</sup> Students will be placed into Business Writing (95-701) or Writing for ISM based upon their standardized test scores

90-711 OR 90-707	Statistical Reasoning with R OR Statistical Reasoning	12  12
94-806 OR 95-818 OR 95-878	Privacy in the Digital Age <sup>3, 4</sup> OR Privacy Policy, Technology, and Law OR Engineering Privacy in Software	6  12  12
95-718 OR 94-718	Professional Speaking <sup>5</sup> OR Communication in XR	6  6
90-723	Financial Statements & Analysis of Companies	6
95-723	Managing Disruptive Technologies	6
95-748	Software and Security	6
95-758	Network and Internet Security	12
95-743	Cybersecurity Policy and Governance I	6
95-744	Cybersecurity Policy and Governance II	6
95-755	Information Security Risk Management -	6
95-749	Cryptography	6
95-720	Capstone Project / Thesis <sup>6</sup>	18/24

### 4.3. Exemption Exams

During orientation week(s), in-coming students are provided an opportunity to take up to 4 exemption exams to demonstrate proficiency in a topic that is considered core to the MSISPM program. A student is NOT required to take any of the exams. Upon passing an exam, a student will be granted an exemption from the class(es). A student will be required to select an alternate security or general elective course to replace the exempted course (and corresponding number of units) to reach the 192

<sup>3</sup> 94-806 (Privacy in the Digital Age) aims at combining social science perspectives on privacy (such as economics and behavioral decision research) with technological perspectives. 95-818 (Privacy Policy, Technology, and Law) or 95-878 (Engineering Privacy in Software) are more technically oriented classes

<sup>4</sup> Beginning Fall 2024, 94-806 will only be offered in Fall semesters.

<sup>5</sup> Students must complete 95-717 and 95-718 or 94-718 prior to the summer internship.

<sup>6</sup> Capstone requirement is satisfied by the Information Security Project or Master Thesis.

units required for graduation. Information regarding the following available exams is found on the [Placement Exam and Exemption Information website](#).

- 90-723 Financial Statements & Analysis (Does not require pre-registration)
- 90-812 Python Programming I (Does not require pre-registration)
- 95-710 Economic Analysis (Does not require pre-registration)
- 90-711 Statistical Reasoning with R (Does not require pre-registration)
- 95-717 Writing for Information Systems Mgmt. (Requires pre-registration)

## 4.4. Elective Courses

Students in the MSISPM Program are required to take at least 30 units of security elective courses and at least 24 units of general electives (18 if pursuing the Thesis option). A number of courses offered by the MSISPM Program and the Heinz College will satisfy this requirement. Some of the courses are listed below. In addition, the School of Computer Science, The Information Networking Institute (INI) and other Carnegie Mellon departments offer graduate-level courses that may satisfy security and/or general elective requirements. Check with your advisor before registering for a course from another academic department if you wish to have it serve as an elective. Only graduate-level courses, (typically) those with a course number greater than 700, will satisfy the security and general elective requirements.

You may take relevant graduate-level courses outside of Heinz College. Up to 36 units of graduate-level courses outside of Heinz College may be counted towards your degree requirements.

### 4.4.1. Course Approval for non-ISM Courses

If you wish to count a course(s) outside of Heinz towards your degree, you must have Program Director approval, and you must submit a [General Petition form](#) prior to the start of the course.

Students may take courses elsewhere on campus as elective courses (security or general) but may not request that a non-Heinz course replace any of the core-MSISPM courses. Most, but not all, graduate courses will be

approved, provided the course meets the criteria for a security or general elective.

Graduate-level courses taken at Carnegie Mellon University or any of the ten Pittsburgh Council on Higher Education (PHCE) institutions will factor into the calculation of the Heinz College grade point average.

#### 4.4.2. Heinz College Sample Security Electives

95-702 Distributed Systems for Information Systems Mgmt.	12 units
95-733 Internet of Things	6 units
95-736 Advanced Relational Database Management	6 units
95-746 Cloud Security	6 units
95-747 Security Data Analytics	6 units
95-757 Information Security Policy & Management	6 units
95-759 Malicious Code Analysis	6 units
95-767 Cybersecurity for AI & ML	6 units
95-810 Blockchain Fundamentals	6 units
95-812 Introduction to the ITIL Framework	6 units
95-818 Privacy, Policy Law & Technology	12 units
95-844 Introduction to Cyber Intelligence	6 units
95-883 Ethical Penetration Testing	6 units
95-884 Network Defenses	6 units
95-889 Applied Threat Analysis	6 Units

#### 4.4.3. Heinz College Sample General Electives

94-800 Negotiation	6 units
94-801 Acting for Leadership and Communication	6 units
94-802 Geographic Information Systems	12 units
94-823 Measuring Social	12 units
94-832 Business Intelligence & Data Mining SAS	6 units
95-703 Database Management	12 units
95-705 Telecommunications Management	12 units
95-712 Object Oriented Programming in JAVA	12 units
95-722 Digital Transformation	6 units
95-729 E-Commerce Tech, Analytics, and Bots	6 units
95-737 NoSQL Database Management	6 units
95-771 Data Structures and Algorithms	12 units
95-775 IT Business Leadership	6 units
95-791 Data Mining	6 units

95-799 Linux and Open Source	6 units
95-808 IT Project Management	6 units
95-865 Unstructured Data Analytics	6 units
95-869 Big Data and Large-scale Computing	6 units

## 5. Internship Requirement

MSISPM students are required to pursue an internship, to be completed during the summer between their first and second years. Minimally, the internship is 300 hours of full-time employment that has formal supervision, is professional in nature, includes work that is of importance to the organization, and has significant educational value.

Before beginning the internship, students must complete the [Internship/Apprenticeship Reporting Form](#) for approval.

The internship will be verified with the students' supervisors and then approved. Students must notify their Academic Advisor and Heinz Career Services of any significant changes in their internships, such as length, location, hours of work, etc.

Once the internship has been approved, students will be registered for the zero-unit internship course. Students will not receive academic credit for the internship, but it will be reflected on their transcript as a course with Pass / No Pass grade. If a student plans to exempt<sup>7</sup> the internship, they will need to complete the [Petition for Course Exemption](#) form. Near the end of the internship, the Career Services Office will request supervisors to complete a Student Performance Evaluation Form.

At the end of your internship your Career Services Advisor will request that your supervisor complete an evaluation form about your internship performance. You are also required to complete an evaluation survey as well as a self-reflection statement describing how your internship fulfilled the educational goals of the program. If you do not successfully complete an eligible internship along with your survey and self-evaluation, you will not fulfill your internship requirement necessary for graduation.

Students are required to complete 95-717 or 95-701 (Writing for Information Systems Management or Business Writing) and 95-718 Professional Speaking prior to enrolling in the internship.

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<sup>7</sup> An example reason for exemption is when a student is on a sabbatical from an organization to pursue a master's degree and they will return to that organization after graduation.



**F-1 Status Students:** You must apply for [Curricular Practical Training \(CPT\)](#) employment authorization for your summer internship. CPT authorization is required regardless of the internship being paid or unpaid. CPT is only available to F-1 students who have not graduated and who have been enrolled on a full-time basis for one full academic year (i.e. fall and spring.) If your degree program requires you to complete a summer internship, you can qualify for CPT. Processing CPT may take up to 2 weeks and you cannot begin employment until you receive authorization. Guidelines, forms and instructions can be found at the Office of International Education's website.

**J-1 Status Students:** You must apply for [Academic Training \(AT\)](#) employment authorization before you begin your summer internship. If your program sponsor listed on your DS-2019 is not CMU (such as Fulbright or IEE), you must contact them for instructions. If your program sponsor is CMU, follow the instructions linked above or [contact your OIE advisor](#).

## 5.1. Securing an Internship

Students are responsible for securing a suitable internship. Heinz College Career Services will provide assistance through counseling, workshops on resume preparation and interview skills, and listings of potential internships. Students can make an appointment to discuss their situation and are encouraged to come to workshops that cover the essential skills for finding the right internship.

# 6. Capstone Project/Thesis Requirement

The **MSISPM Capstone Project** or **Thesis** is designed to capture the essence of knowledge gained by the students from the coursework and apply it towards research or new application initiatives. The project or thesis should be on a topic in an area of research or application that is interesting and relevant to information security. Research may include working on existing projects, designing new areas of research, or assisting faculty with their current research.

## 6.1. Capstone Project

A **Capstone Project** will consist of a group of 4 or more students working on a security related problem. Projects are held during the final semester of study and are subject to approval from the Associate Dean and Program Director. Heinz

College will obtain MSISPM project sponsors; obtain an academic advisor; and create project teams with necessary skills to be successful. Students can work with:

- A Carnegie Mellon faculty or staff member on his/her research interests related to security
- A vendor of security related products sponsored /advised by a faculty member
- Or, an outside firm be it consulting, government or any other organization working on a security related problem sponsored/advised by a faculty member

## 6.2. Thesis

A **Thesis** will consist of a student working by himself/herself on research related topics with sponsorship from a Carnegie Mellon faculty member. A thesis can be completed during the Fall, Spring, or Summer semesters. It is the responsibility of the student to complete required paperwork, receive approval of the thesis topic, and obtain a faculty advisor by December 1, 2024 in order to complete the work in the Spring 2025 semester.

Approximately mid-way through your third semester, your advisor will contact you to confirm your intention to complete a MSISPM Project or MSISPM Thesis.

## 7. Number of Units per Semester

Students typically take between 48 – 54 units per semester, with a maximum of 54 units per semester. If students are interested in taking an excess of 54 units, then they need to petition the Program Director by completing the online "[General Petition Form](#)", available on the Heinz College Current Student Website.

## 8. Summer Courses

Students who are completing their in-person (non-remote) internship in Pittsburgh during the summer semester are permitted to take one, in-person (non-distance) Heinz College course, either 6 units or 12 units. Prior to enrolling in the course, please obtain approval from the Program Director, and after enrollment, please inform the Program Director to ensure proper crediting of your student bill for the summer tuition. There is no additional cost to take the one course during the summer semester.