Carnegie Mellon University

HeinzCollege

INFORMATION SYSTEMS • PUBLIC POLICY • MANAGEMENT

Student Handbook	2016 – 2017

Master of Science in Information Security Policy and Management (MSISPM)

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1 MASTER OF SCIENCE IN INFORMATION SECURITY POLICY AND MANAGEMENT (MSISPM) CURRICULUM

Students will normally complete the MSISPM program in four semesters. 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;
- all required courses (unless you exempt them);
- required summer internship (10 weeks / 40 hours per week)
- 30 units of security elective courses;
- 24 units of general elective courses if pursuing the capstone project option or 12 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.

1.1 Required Courses

The following is a sample schedule with all the required courses students must complete in four academic semesters.

First Semester: (Fall)

95-752 Introduction to Information Security Management	12 units
95-702 Professional Writing	6 units
95-796 Statistics for IT Managers	6 units
95-710 Economic Analysis	6 units
94-700 Organizational Design & Implementation	6 units
94-806 Privacy in the Digital Age	6 units
xx-xxx General Electives	6 units

Second Semester: (Spring)

95-723 Managing Disruptive Technologies	12 units
95-758 Network and Internet Security	12 units
95-748 Software and Security	6 units
95-719 Accounting and Finance Foundations	6 units
xx-xxx Security Electives	12 units

Third Semester: (Fall)

95-744 Information Security Policy and Governance	6 units
95-718 Professional Speaking	6 units
95-743 Information Security Compliance and Training	6 units

95-760 Decision Making Under Uncertainty	6 units
xx-xxx Security Electives	18 units
xx-xxx General Electives	6 units

Fourth Semester: (Spring)

95-720* Capstone Project	24/36 units
95-755 Information Security Management	6 units
95-749 Cryptography	6 units
xx-xxx General Electives	12/0 units

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

1.2   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 (12 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, and other Carnegie Mellon departments offer courses that may satisfy general electives requirement. Check with your advisor before registering for a course from another academic department if you wish that serve as an elective. Only graduate-level courses, those with a course number greater than 700, will satisfy the security and general elective requirements.

1.2.1   Sample Security Electives

95-702 Distributed Systems	12 units
95-736 Advanced Relational Database Management	6 units
95-753 Internet Security	6 units
95-756 Information Security Risk Management II	6 units
95-757 Information Security Policy & Management	6 units
95-883 Ethical Penetration Testing	6 units
95-884 Network Defenses	6 units
95-855 Network Situational Awareness	12 units

1.2.2   Sample General Electives

95-703 Database Management	12 units
95-737 NoSQL Database Management	6 units
95-705 Telecommunications Management	12 units
95-712 Object Oriented Programming in JAVA	12 units
95-733 Internet Technologies	6 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
95-818 Privacy, Policy Law & Technology	12 units
95-859 Innovation & Technology	6 units
95-729 E-Commerce Technologies	6 units
95-732 Marketing and Digital Strategy	6 units
95-771 Data Structures and Algorithms	12 units
95-791 Data Mining	6 units
95-797 Data Warehousing	6 units
94-800 Negotiation	6 units
94-801 Acting for Management	6 units
94-802 Geographic Information Systems	12 units
94-823 Measurement & Analysis Social Media Initiatives	12 units
94-840 Lean Entrepreneurship	6 units
91-843 Power and Influence	6 units

2 **INTERNSHIP REQUIREMENT**

MSISPM students will pursue an internship during the summer. Minimally, the internship is ten weeks (280 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 online Career Services Internship Reporting Form for approval.

The internship will be verified with the students' supervisors and then approved. Students must notify their Career Advisor 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 internship course. MSISPM students are eligible to receive up to 3 units of credit for their internship upon submission of required paperwork. The internship will be reflected on the transcript as a course with Pass/Fail grade. If a student plans to exempt 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.

It is strongly recommended that students complete 95-702 Professional Writing and 95-718 Professional Speaking prior to enrolling in the internship.

F1 Visa 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.

2.1   Securing an Internship

When students choose to do an internship, they will be responsible for securing a suitable internship. 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 students are encouraged to come to workshops that cover the essential skills for finding the right internship.

3   PROJECT / THESIS

The **MSISPM 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.

A **MSISPM 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. Students can work with:

- A Carnegie Mellon faculty 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

A **MSISPM 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 taken during the Fall, Spring, or Summer semesters.

4   NUMBER OF UNITS PER SEMESTER

Students typically take between 48 – 60 units per semester, with a maximum of 60 units per semester. If students are interested in taking an excess of 60 units, then they need to petition the Program Director by completing the Online General Petition Form.

5   ACADEMIC POLICIES

5.1   Adding / Dropping Courses

Students may choose to add or drop a course after the beginning of the semester. Please note that the add/drop deadline for mini courses (6 units) is 5 days after the beginning of the semester and 10 days after the beginning of the semester for a full-semester (12 units) course. You must obtain approval from your faculty advisor prior to adding or dropping a core course for the MSISPM program. Additions or dropping of classes after the posted deadlines must be approved by the program director and are generally not permitted except under extenuating circumstances. A General Petition Form (Count course as selective, late add/drop a course, increase in units) is available on the Heinz Website.

5.2   Independent Study

Twelve (12) units of an independent study that will count towards the 192 units required for graduation are permitted, but must be approved by the program director prior to enrolling. It is the responsibility of the student to identify a faculty member to supervise the independent study and submit an Independent Study Contract, available on the Heinz Website.

5.3   Pass / Fail

Twelve (12) units of courses may be taken with a grading option of Pass / Fail that may count towards the 192 units required for graduation. These courses will not impact the QPA of the student and ONLY elective courses are eligible. A separate request is to be made for each course by completing the "Request for P/F" form to be reviewed and approved by the program director. Failure to submit the P/F for will result in the course being taken for a grade rather than P/F. It is suggested that students consider taking P/F courses during their busiest semester.

5.4   Audits

Students are permitted to audit courses and any non-core or elective course is eligible. Courses that are taken with the audit option do not count towards the 192 units required to graduate and require approval from the course instructor. Students must request approval from the program director by completing the "Petition to Audit a Heinz College Course" form. Failure to obtain approval from the course instructor and program director will result in the course being taken with a grade option. Courses approved for audit will not affect a student's QPA.

5.5   Receiving an Incomplete

If extenuating circumstances beyond a student's control prevent them from completing all requirements for a course by the end of the semester, a student may ask the instructor for permission to take an incomplete and complete the work after the semester. Students should submit a signed contract **BEFORE** the end of the semester and must complete the work by the end of the following semester. Failure to do so will result in the student receiving the default grade for the course.

5.6   Course Approval for non-ISM Courses

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. Students must obtain approval from the program director prior to registering for the course by completing and submitting the "General Petition Form". Most, but not all, graduate courses will be approved, provided the course meets the criteria for a security or general elective.

6   CONTACT INFORMATION

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