Carnegie Mellon University
HeinzCollege
INFORMATION SYSTEMS • PUBLIC POLICY • MANAGEMENT

MSIT Program Handbook	2023-2024

Master of Science in Information Technology

- Information Technology Management
- Information Security and Assurance
- Business Intelligence and Data Analytics
- Customized Partner Programs:
    - *General Motors*

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MSIT PROGRAM HANDBOOK

1   COLLEGE AND PROGRAM HANDBOOKS

It is the student's responsibility to know, understand and abide by the policies contained in both the [Heinz College-wide Student Handbook](#) and this MSIT Program Handbook. The Student Handbook 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. The Program Handbook provides specific information on the curriculum and program requirements for the **Master of Science in Information Technology (MSIT)** degrees. Therefore, students must familiarize themselves with **both** handbooks, which are available at the Heinz College website at https://www.heinz.cmu.edu/current-students/ and upon request from the MSIT Program Director: Mrs. Allison Frankoski, 412-268-8983, allison@cmu.edu, Hamburg Hall 1104D.

2   MSIT PROGRAM OVERVIEW

The MSIT program is designed for the experienced technology professional to complete one of three master's degrees on a **part-time** basis alongside their full-time job. It offers fully online study, or a hybrid of online and on-campus evening classes for local students, and the flexibility for students to choose a course load each semester that best suits their work and personal situation. Most part-time MSIT students take 1-2 courses (18-24 units) each semester and can complete the program in 2-3 years. However, students have up to five years to finish the program, allowing them to take a slower pace of 6-18 units each semester. They may extend the length up to seven years when due to extenuating circumstances and/or leaves of absence.

The MSIT program offers three majors of study:

- MSIT-Information Technology Management – evening (MSIT-ITM) or online (MSIT-IMD)
- MSIT-Information Security & Assurance – evening (MSIT-ITA) or online (MSIT-DIA)
- MSIT-Business Intelligence & Data Analytics – evening (MSIT-BI) or online (MSIT-DBI)

Each degree requires completion of 60 units of core courses and 84 units of elective coursework. Of those 84 units of elective, up to 12 units may be an independent study related to the selected major and up to 24 units may be from transfer credit of previously earned graduate credit.

Electives may be from the list of 95-xxx Information Systems Management department courses, the MSIT online course catalog, and graduate-level courses offered by other Heinz College programs or CMU departments, subject to pre-approval from the MSIT Program Director.

This handbook also covers customized degree programs for our partnership with General Motors. These custom programs are variations of the above programs of study and their requirements are in section 4.5 of this handbook.

3   **MSIT PROGRAM-SPECIFIC POLICIES**

The **Master of Science in Information Technology (MSIT)** program abides by the policies of the Heinz College as outlined in the college-wide [Student Handbook](#). MSIT students are expected to maintain good academic performance with integrity, as outlined in Sections 14. Grading and Evaluation, 15. Academic Standing, and 16. Ethics and Discipline. Following are MSIT program requirements and some modifications from the college handbook that are specific to MSIT:

3.1   *Graduation Requirements*

A MSIT student must satisfy the following requirements within five years from the first semester in which they matriculated to graduate from the MSIT program:

- Earned 144 units of course credit *(including approved transfer credit)*
- Successfully passed all core courses *(or earned an exemption from the course)*
- Achieved a minimum cumulative quality point average (QPA) of 3.0

Students who achieve a final QPA of 3.75 or higher will be recognized with a certificate of graduation with distinction or highest distinction from the Heinz College. See section 15.6 Awards in the Student Handbook for more information.

The statute of limitations to complete the MSIT degree is five years. This is a more restrictive policy than the 7-year statute posted in the college handbook or by [Carnegie Mellon University](#). After five years, a student may petition to extend this up to seven years if the delay was due to extenuating circumstances and/or extended leave(s) of absence. Students must contact the Program Director during their fifth year to discuss their plan for completion within seven years.

3.2   *Part-time Course Load*

MSIT is a **part-time only** program so students may take **up to 30 units per semester**, although most find around 18 units is a manageable load. Students who intend to enroll full-time (36 units or more) on a regular basis should pursue one of the full-time Heinz College programs instead. **MSIT is not eligible for student visa.**

A full-semester course carries 12 units (equivalent to 4 credits on that common scale) and generally expects 12 hours of time and effort per week on average, including 3 hours of lecture per week. "Mini" courses are half of a semester in length; they generally carry 6 units (equivalent to 2 credits) and require about 12 hours per week as well. Part-time students should use this as a guide to determine how much coursework they can manage on top of their employment and personal commitments.

Students may petition to exceed 30 units **temporarily** if the student has extenuating circumstances that warrant a heavier course load and their academic performance to that point shows they can handle the extra course load. **International MSIT students cannot exceed 30 units ever,** regardless of circumstances, due to visa regulations.

Students may adjust their course load without any academic or financial penalty up until the official Add/Drop deadline for Heinz College classes, which is typically within the first two weeks of a semester-long class and just the first week of each mini-semester class. Any schedule changes after that deadline must be due to extenuating circumstances and require filing a General Petition form. Students should discuss their situation with the Program Director first as there may be other options besides dropping, such as requesting an Incomplete (I) grade or using your annual Late Voucher to switch to Pass/No Pass Grade.

The Incomplete grade option may be appropriate when a student is making good progress in a class, but extenuating circumstances will prevent them from completing it by the end of its term. If the instructor agrees, the student and instructor must submit a formal contract before the Official Last Day of Class (see the Academic Calendar) detailing the plan for completion, including a default final grade if the remaining work is not done. The incomplete work must be done no later than the end of the subsequent semester, or sooner if the contract dictates.

Part-time students may take a semester or more off from classes by submitting a **Leave of Absence form** to the Program Director. When a student is ready to return to studies, they must submit the **Petition to Return from Leave** to the Program Director no later than one week before the first day of the semester. Students can get these forms from the registrar's website: https://www.cmu.edu/hub/forms.html.

See the HUB's website for more information about course drops, leaves of absence and their impact on tuition at https://www.cmu.edu/hub/registrar/course-changes/index.html.

3.3   Exemption and Transfer Credit

All petitions for exemption and transfer credit should be submitted within your first semester of enrollment.

MSIT students may pursue exemptions from core courses if you have already acquired all or most of the skills taught in that course outside of the College. To receive an exemption, you must petition the instructor of the relevant course or take their qualifying exam. The procedures are in the Student Handbook, Section 13.12 and general information is posted here. Please note you do not earn credit for an exemption; therefore, you must take additional elective to make up the core units that were exempted. An exemption does mean you have satisfied completion of that core course for purposes of graduation, as well as if that course is a prerequisite for another class.

Refer to Section 14.7 of the Heinz College Student Handbook for **Transfer Credit** information. In general, the Heinz College full-time programs do not give transfer credit for graduate courses taken prior to admission. However, the **MSIT program will consider up to 24 units of relevant transfer credit** to count towards MSIT electives. The **Application for Transfer Credit** is provided by the Program Director during orientation and upon request. Applications are decided on a case-by-case basis and depend on a few factors. Minimum criteria include that the credit was earned with a grade of B or better within the last 7 years at a regionally accredited university. That grade will not be calculated into your CMU quality point average, but the units will be counted towards MSIT elective and will appear on your CMU transcript.

3.4   Elective Options

Independent Study: Students may take up to 12 units of Independent Study as an elective, except for our sponsored students from General Motors. Contact the Program Director for guidelines on developing an appropriate independent study.

Pass/No Pass Grade Option: Students may take up to 12 units of elective coursework with the Pass/No Pass grade, except for our sponsored students from General Motors. See more details in the College Handbook.

Registering for Non-Heinz College Courses: Students may take up to 40 units of graduate coursework from other CMU departments outside of Heinz College, except for our sponsored students from General Motors. You **must get approval in advance** from the Program Director over email or by filing a [General Petition](#) prior to the course start date.

Courses at Other Universities: This falls under the transfer credit policy for MSIT (see Section 3.3) and must be courses completed **prior** to admission. Any exceptions to that policy must be due to extenuating circumstances and require a petition to the Program Director **before** taking the non-CMU course, unless it was pre-approved as part of a custom curriculum, e.g., GM.

3.5   Java Programming Prep Course and Other Training Resources

The Heinz College's School of Information Systems and Management courses (95-xxx) typically expect students have had an undergraduate level object-oriented programming course or equivalent work experience. This background is particularly required before taking our Java programming classes, 95-712 or 95-807, which are NOT introductory courses.   Anyone lacking that background or needing a refresher should pursue a prep course outside of the MSIT curriculum, such as:

CMU Open Learning: https://oli.cmu.edu/courses/introduction-to-programming-in-java-o-f/
Heinz College Admissions: [Pre-Approved Java Programming Courses](#) for MSIT/MISM applicants
CMU students have free access to online training at [Lynda/LinkedIn Learning](#)

4   MSIT CURRICULUM

4.1   MSIT-Information Technology Management (MSIT-ITM, MSIT-IMD)

This degree can be done fully online or a hybrid of online and on-campus evening classes. It requires one undergraduate level object-oriented programming class or equivalent work experience prior to admission because that is a prerequisite for the core java class (95-712 or 95-807). See Section 3.5 for java prep suggestions.

95-703	Database Management	12 units
95-807*	Object Oriented Programming for Managers (Java)	12 units
95-705	Telecommunications Management	12 units
95-734	Managing Digital Business	12 units
95-706	Object-Oriented Analysis and Design	6 units
95-808**	IT Project Management	6 units
Various	Electives	84 units

* 95-712 can be substituted for 95-807 by local students; you may take either one but not both. 95-712 is recommended if you intend to take more technical electives on-campus, like 95-702 Distributed Systems, 95-771 Data Structures, or any School of Computer Science course.

** 94-813 can be substituted for 95-808.

4.2   MSIT-Information Security and Assurance (MSIT-ITA, MSIT-DIA)

This degree can be done fully online or a hybrid of online and on-campus evening classes.

95-752	Intro to Information Security Management	12 units
95-705	Telecommunications Management	12 units
94-806	Privacy in the Digital Age	0-6 units*
95-744	Cyber Security Policy and Governance	6-12 units*
95-748	Software and Security	6 units
95-755	Information Security Risk Management	6 units
95-758	Network and Internet Security	12 units
Various	Electives	84 units

* Students who have taken 95-744 as a 6-unit course are required to also take 94-806 as part of their core requirements. Starting Fall 2023, 95-744 will become a 12-unit core course and 94-806 will be dropped from the MSIT-ITA/DIA core.

4.3   MSIT-Business Intelligence and Data Analytics Track (MSIT-BI, MSIT-DBI)

This degree can be done fully online or a hybrid of online and on-campus evening classes.

95-703	Database Management	12 units
95-710 *	Economic Analysis	6 units
95-796 *	Statistics for IT Managers	6 units
94-806	Privacy in the Digital Age	6 units
95-797**	Data Warehousing	6 units
95-868	Applied Exploratory Data Analysis (using R)	6 units
95-854***	Machine Learning with Tableau	6 units
95-865	Unstructured Data Analytics	6 units
95-866	Advanced Business Analytics	6 units
Various	Electives	84 units

* 91-803 can be substituted for 95-710 and 91-801 can be substituted for 95-796. Since 91-803 and 91-801 are each worth 12 units, they will use 6 units of MSIT core and 6 units of electives. This is for local students only since 91-803 and 91-801 are on-campus classes only.

** 95-797 was on hiatus Spring 2021-23 due to Covid and graduating students could petition to substitute 95-797 with another BIDA-related course. Now that it has returned to the schedule effective summer 2023, no substitutions will be made after 2023.

*** 95-854 Machine Learning with Tableau replaced 95-791 Data Mining in S23. Students may take either 95-791 or 95-854, but not both, due to the overlap of ML concepts.

4.4   Customized Partner Programs

All Heinz College and MSIT policies apply unless otherwise modified in the curriculum distribution listed here or in the educational partnership agreement/contract.

4.4.1 General Motors Information Systems Management (MSIT-DIM aka MSIT-ISM)

95-703	Database Management	12 units/4 credits
95-807	Object Oriented Programming	12 units/4 credits
95-705	Telecommunications Management	12 units/4 credits
95-734	Managing Digital Business	12 units/4 credits
95-706	Object-oriented Analysis & Design	6 units/2 credits
95-808	IT Project Management	6 units/2 credits
95-752	Intro to Info Security Management	12 units/4 credits
95-720	Information Systems Project	24 units/8 credits
Various*	ISM-related Electives	30 units/10 credits
Various*	General Electives	18 units/6 credits

* See the GM TEP website for the approved list of electives in the TEP MSIT-ISM Curriculum Plan.

4.4.2 General Motors Business Intelligence & Data Analytics (MSIT-GBI aka MSIT-BIDA)

This major was added by GM TEP in Spring 2018:

95-703	Database Management	12 units/4 credits
95-710	Economic Analysis	6 units/2 credits
95-796	Statistics for IT Managers	6 units/2 credits
94-806	Privacy in the Digital Age	6 units/2 credits
95-797*	Data Warehousing	6 units/2 credits
95-868	Applied Exploratory Data Analysis	6 units/2 credits
95-854**	Machine Learning with Tableau	6 units/2 credits
95-865	Unstructured Data Analytics	6 units/2 credits
95-866	Advanced Business Analytics	6 units/2 credits
95-720	Information Systems Project	24 units/8 credits
Various***	BIDA-related Electives	30 units/10 credits
Various***	General Electives	30 units/10 credits

* 95-797 was on hiatus Spring 2021-23 due to Covid and graduating students could petition to substitute 95-797 with another BIDA-related course. Now that it has returned to the schedule effective summer 2023, no substitutions will be made after 2023.

** 95-854 Machine Learning with Tableau replaced 95-791 Data Mining in Spring 2023. Students may take either 95-791 or 95-854, but not both, due to the overlap of ML concepts.

*** See the GM TEP website for the approved list of electives in the TEP MSIT-BIDA Curriculum Plan.

4.4.3 General Motors Information Security & Assurance (MSIT-GSA or MSIT-ISA)

This major was added by GM in Fall 2018:

95-752	Intro to Information Security Management	12 units/4 credits
95-705	Telecommunications Management	12 units/4 credits
94-806*	Privacy in the Digital Age	0-6 units/0-2 credits
95-744*	Cyber Security Policy and Governance	6-12 units/2-4 credits
95-748	Software and Security	6 units/2 credits
95-758	Network and Internet Security	12 units/4 credits
95-755	Information Security Risk Management	6 units/2 credits
95-720	Information Systems Project	24 units/8 credits
Various**	ISA-related Electives	30 units/10 credits
Various**	General Electives	30 units/10 credits

* Students who have taken 95-744 as a 6-unit course are required to also take 94-806 as part of their core requirements. Starting Fall 2023, 95-744 will become a 12-unit core course and 94-806 will be dropped from the MSIT-ITA/DIA core.

**See the GM TEP website for the approved list of electives in the TEP MSIT-ISA Curriculum Plan.

5 STATEMENT OF ASSURANCE

The Statement of Assurance can also be found on-line at:
https://www.cmu.edu/policies/administrative-and-governance/statement-of-assurance.html.