



Academic Year 2026-2027

**Master of Science in Health Care Analytics and
Information Technology (MSHCA)
Student Handbook Addendum**

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1. Introduction

This handbook provides specific information on the curriculum and program requirements for the Master of Science in Health Care Analytics and Information Technology (MSHCA) program. Heinz College also publishes a separate handbook (see below) 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 Carnegie Mellon Student Handbook](#)

2. MSHCA Program Outcomes and Competencies

Students in the Master of Science in Health Care Analytics and Information Technology (MSHCA) program learn how to use data to tackle complex problems and develop actionable solutions to improve patient care and advance the health care industry. Heinz College empowers students to use advanced tech and data to transform the future of the health care system.

At the completion of the MSHCA program, students will be able to:

- Apply leadership, management, and ethical principles or skills to analyze and address challenges or identify opportunities in health care organizations and delivery
- Analyze and synthesize data to solve problems and support data-driven decisions that improve efficiency, quality, and outcomes
- Assess and leverage information technology to address complex business problems and operational challenges in health care settings
- Communicate and interact effectively with health care industry stakeholders
- Apply a deep understanding of foundational knowledge to the evolving health care industry

3. Department Personnel

The staff listed below are directly associated with the MSHCA program. There is a robust team at Heinz College and CMU available to help you navigate your education, from financial aid and student services to disability services and more.

Sara Moussawi	Senior Associate Dean of Academic Programs	smoussaw@andrew.cmu.edu
Christopher Goranson	Senior Director, School of Public Policy & Management	goranson@cmu.edu
Lauren Scott	Director, Public Policy & Analytics Programs	laurencs@andrew.cmu.edu
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Erin Kucic	Academic Program Manager	ekucic@andrew.cmu.edu
Ashley Wells	Academic Coordinator	awells2@andrew.cmu.edu
Annie Julian	Director of Student Experience & Engagement	ajulian@cmu.edu
Diane Taylor	Director of Partnerships and External Engagement	detaylor@andrew.cmu.edu

4. Curriculum

4.1. MSHCA Program Requirements

Students will complete the MSHCA two-year program in four consecutive semesters, excluding the summer semester. The MSHCA curriculum is structured with a set of common core courses and free electives. To successfully complete the MSHCA program, students must complete the following:

- 192 units* of course credit, including:
 - All core courses (unless exempted)
 - Optional: Students may count a maximum of 36 units of graduate-level, degree-relevant courses outside of Heinz College to count towards the unit minimum.
- Approved internship between the first and second year
- All other standards for graduation, including achieving a minimum cumulative grade point average of 3.00

Students who entered the MSHCA program **prior to Fall 2026** should follow the curriculum outlined in the handbook aligned with their program start date. For example, if your first semester as an MSHCA student was Fall 2025, please reference the handbook for Academic Year 2025-2026, which precedes this version. Archived handbooks can be found on the [Heinz College Current Student website](#).

**Note: Carnegie Mellon has adopted the method of assigning a number of “units” for each course to represent the quantity of work required of students. For the average student, one unit represents one work-hour of time per week throughout the semester. The number of units in each course is fixed by the faculty member in consultation with the college offering the course. Three units are the equivalent of one traditional semester credit hour.*

4.2. Core Curriculum/Course Sequencing

Students will take core courses in the sequence shown below unless exempted, or they obtain permission in advance from their Academic Advisor.

Please Note: Students will be pre-registered for the first semester of classes. Students will register themselves for the remaining semesters, in consultation with their Academic Advisor.

MSHCA Course Schedule		
Course #	Course Title	Units
Fall 2026 Courses - Year 1		48 total
90-836	Health Systems	6
90-777	Accelerated Statistics	6
95-703	Database Management	12
90-819 or 95-888	Intermediate Programming with Python OR Data Focused Python (based on placement)	6
90-800	Exploratory Data Analysis	6
95-703	Strategic Communication for ISM	6
90-741	HCA Professional Seminar	0
Spring 2027 Courses - Year 1		48 total
94-706	Health Care Information Systems	12

90-861	Health Policy	6
94-834	Applied Econometrics I	6
90-775	Optimization and Decision Modeling for Analytics	12
90-803	Machine Learning Foundations with Python	12
	Summer 2027	
94-900	Analytics Summer Internship (Required)	0
	Fall 2027 Courses – Year 2	48 total
94-705	Health Economics	12
95-855	Unstructured Data Analytics	6
94-700	Organizational Design and Implementation	6
94-867	From Data to Action	6
--	Electives	18
	Spring 2028 Courses – Year 2	48 total
95-719	Accounting and Finance Analytics	6
94-709	Applied Analytics in Health Care (CAPSTONE)	12
--	Electives	30
<i>192 Units required to graduate</i>		

4.3. Optional Concentration and Specializations

4.3.1. AI Management Concentration

MSHCA students may pursue a concentration in Artificial Intelligence (AI) Management, alongside students in other programs at Heinz College. To maximize the impact AI can have while minimizing its risk of harm, the world needs leaders who understand the entire AI life cycle and steer the technology toward the greater good. The purpose of this concentration is to build aptitude in operationalizing and governing AI systems. This concentration can be a differentiator in the job market and in your career.

Students opting to pursue an AI Management concentration should discuss with their Academic Advisor and must submit the [Concentration Declaration Form](#). They may also

request a letter of concentration completion from the Heinz College Office of Academic Services upon graduation.

The AI Management concentration coursework includes 18 units of foundational courses and 18 units out of approved electives for a total of 36 units. In addition, students will be encouraged to do a capstone project related to AI to solve a real-world problem. For approved courses, please consult with your Academic Advisor and refer to the Heinz College course catalog. The below course listing can also serve as a helpful guide.

Foundational Courses (18 units)

Course No.	Title	Units
95-891	Introduction to Artificial Intelligence	12
94-703	Demystifying AI	6
94-879	Fundamentals of Operationalizing AI	6
94-885	Responsible AI: Principles, Policies, Practices	6

Approved Electives (18 units required)

Course No.	Title	Units
94-816	Generative AI: Applications, Implications and Governance	6
94-812	Applications of NL(X) and LLM	6
94-844	Generative AI Lab	6
93-830	Disruptive Technologies in Arts Enterprises	6
95-767	AI Security	6
94-881	Managing Analytics Projects	6
94-889	Machine Learning for Public Policy Lab	12
95-828	Machine Learning for Problem Solving	12
94-815	Agent-Based Modeling and Digital Twins	6
94-888	Tech Strategy	6
95-851	Making Products Count: Data Science for Product Managers	6
94-717	Systems Thinking & Discrete Event Simulation	6
94-829	Advanced AI and Business Strategy	6
94-866	Design Thinking	6
90-769	Critical AI Studies for Public Policy	6
94-830	AI, Ethics and Humanity	6
94-894	AI & Emerging Economies	12

Beyond the AI Management concentration, students can also design and develop their own concentrations with the assistance of their Academic Advisor or Program Director. Concentrations require that students complete a minimum of 36 units from courses relevant to the concentration area. These units must be earned through approved coursework that aligns with the academic and professional focus of the chosen concentration.

To declare a concentration, students must submit the [Concentration Declaration Form](#) available on the Heinz College website. This form can be submitted at any time after the decision to pursue a concentration—there is no need to wait until all coursework is completed. If a course substitution becomes necessary during the program, Academic Services can assist with updating your academic record.

5. Number of Units per Semester

5.1. Normal Courseload Expectation for MSHCA Students

Students typically take between 48–54 units per semester, though the exact number of units will vary by individual student. To make normal academic progress for the MSHCA program, students are expected to take 48 units per semester (for a total of 192 units over four semesters).

5.2. Unit Increase Policy

First semester MSHCA students will have a maximum of 48 units. Starting with their second semester, this will be raised to 54 units for all students who are in good academic standing, generally defined as maintaining a cumulative grade quality point average of at least a 3.0. Students who are placed on warning or academic probation may have their unit increase reversed and an advising hold placed until they have met with their Academic Advisor.

Students who feel prepared to take on additional academic challenges beyond the standard course load may request a unit increase. They can do so by submitting a [General Petition Form](#), available on the Heinz College Current Student Website, to their Academic Advisor.

5.2.1. Requirements

Students demonstrating strong academic performance with a **3.5 Cumulative Quality Point Average (CQPA)** or higher may request for advisor approval to increase up to 60 units. Any increase requests above 60 units will require additional approvals and are not guaranteed. Please contact your Academic Advisor.

Students who need to retake a course may be approved for a unit increase in order to make up the course and stay on track for graduation, regardless of their cumulative QPA.

5.2.2. Timeline for Increasing (Optional) Additional Units per Semester

First Semester: First semester MSHCA students will have a maximum of 48 units. Unit increases are permitted only for students selected to participate in 90-700 Heinz Journal (3 units).

Second Semester: All MSHCA students in good standing will be able to enroll in up to 54 units for their second and subsequent semesters automatically. Requests to increase to 60 units will be processed only after first mini grades are posted and the 3.5 CQPA requirement has been met.

Future Semesters: Students with a CQPA of 3.5 or higher may be approved for up to 60 units after mini grades are posted; approved increases take effect the week after registration opens for the following semester.

6. Capstone Project (Systems Synthesis) Coursework

Students must complete a minimum of 12 units of a capstone (Systems Synthesis) or an approved project-based course to fulfill degree requirements. Capstone projects are team-based, faculty-advised experiences that allow students to tackle degree-relevant challenges, working with a client from a real organization. Projects typically require a combination of technological, quantitative, and analytical knowledge and skills applicable to healthcare issues and settings, and are sponsored by a variety of public and nonprofit organizations and private companies. Students work collaboratively in teams with support from a shared faculty advisor, benefiting from a structured and standardized experience that includes guidance on project scoping, team management, and client engagement.

MSHCA students will complete the standard capstone project in their final semester. This timing is designed to ensure students are best prepared to integrate and apply the full range of skills developed across the program to date.

In the semester preceding the capstone, students will participate in a structured process to be matched with a capstone project aligned with their interests and career goals. Teams are designed to leverage students' complementary skill sets, while providing opportunities for professional growth.

6.1. Capstone (Systems Synthesis) Course Alternatives

While the standard capstone is completed in the final semester, students may choose to fulfill the capstone requirement by enrolling in an approved 12-18 unit project-based course. Students pursuing this option must notify their Academic Advisor and Program Director by the published deadline. Deadlines and accompanying guidance will be communicated in advance and will align with the academic calendar, occurring early in the fall term for fall projects and prior to spring registration for spring projects. Students must adhere to these deadlines, as communicated by their Academic Advisor and Program Director.

Approved Fall and Spring semester alternatives include:

- 94-891: Lean Innovation Lab (12 units)
- 45-996: Corporate Start-Up Lab (12 units, application required)
- Other approved project courses offered by Heinz College on an occasional basis with Program Director and Academic Advisor approval

[Corporate Startup Lab \(CSL\)](#) is hosted by Carnegie Mellon University's Swartz Center for Entrepreneurship, in collaboration with the Tepper School of Business. Enrollment in CSL is not automatic; students must complete an application and selection process, and admission is competitive. Fall applications typically open in late spring and close by mid-late summer (June–August), while Spring applications open in late fall and close in December.

6.2. Registration for Capstone (Systems Synthesis) Coursework

Students completing the standard capstone project do not need to register for the MSHCA capstone course, 94-709: Applied Analytics in Healthcare. Heinz Academic Services will automatically enroll eligible students shortly before the start of their final semester. Students intending to complete an approved alternative project-based course must inform their Academic Advisor and Program Director by the stated deadlines to opt out of this process.

6.3. Development of Capstone (Systems Synthesis) Projects

Students seeking to propose a capstone project should arrange an initial meeting with the MSHCA Program Director and/or the Director of Partnerships and External Engagement to discuss the potential project. Next, the student may engage the prospective client or

partner organization to meet with the Program Director and/or the Director of Partnerships and External Engagement. These meetings will help to assess the suitability of the proposed project and establish shared expectations regarding key elements including project scope, timeline, and data access and sharing.

Only after these preliminary discussions, and if the project is deemed appropriate, will students be invited to submit a formal proposal using a template provided by the College.

The proposal should include, to the extent possible:

- A brief description of the system or problem to be studied
- The proposed client or partner organization
- The types of potential improvements or policy alternatives to be considered
- The data to be used and plans for how the data will be obtained
- The anticipated analytical methods or approaches
- An assessment of the project's feasibility within a one-semester timeframe
- The name(s) of proposed faculty advisor(s), if known

7. Independent Studies for Student Research

As explained in the [Heinz College Handbook](#), optional Independent Study courses allow for one-on-one interaction between a professor and a student. To receive approval for an independent study course, you must submit an [Independent Study Contract](#) to the faculty advisor and your Academic Advisor, accompanied by a memorandum which describes the plan for this independent study course and includes the number of units to be earned, the deliverables of the independent study (i.e., a paper or series of papers, etc.), and grading criteria.

If participating in an Independent Study, MSHCA students are generally expected to submit 25-30 pages for a 12-unit Independent Study and 12-15 pages for a 6-unit Independent Study.

8. Internship Requirement

MSHCA students are required to spend the summer following their first year in the program gaining relevant professional experience working in a public agency, non-profit organization, private firm, or other organization. Your internship duties must have significant educational value.

Your internship will train you in ways significantly different from classroom instruction. By working in a professional environment, you will solidify the knowledge gained in your Heinz College

coursework, refine career interests, and establish personal networks that might lead to later career opportunities. You may pursue paid or unpaid internships.

Students are responsible for securing a suitable internship. The [Mary Beth and Miles Reidy Career Center](#) aids in this search through counseling, workshops on resume preparation and interview skills, and listings of potential internships. Students are strongly encouraged to make appointments with their Career Services advisor to discuss their search and are encouraged to come to workshops that cover the essential skills for finding the right internship.

International students are required to consult with the [Office of International Education](#) for eligibility for work authorization before starting or seeking an internship. International students will benefit from proactively reviewing OIE guidance regarding off-campus [work authorization](#). Off-campus work authorization processing times can take several weeks or months, and international students will benefit from starting the off-campus work authorization process as early as possible.

8.1. Internship Requirements

- Students must attend an internship information session hosted by the Career Center in their first year spring semester to learn more about specific internship requirements and support offered by the Career Center
- The internship duration is a minimum of 300 hours and is to be completed in the summer between your first and second year only
- Students may only count one internship toward the requirement, unless otherwise approved by the Career Center
- The internship must be reported to the Career Center no later than June 30 in the summer between first and second year
- Students must complete the online Heinz Internship Extension Course administered by the Career Center via Canvas and complete required assignments in order to pass the Internship Course. (Note: Students will be automatically enrolled.)
- Students must notify their Career Advisor of any significant changes in their internships, such as duties, length, location, hours of work, etc.

The Canvas Course includes a module to report the internship. The internship will be verified by the students' Career Advisor and then approved.

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 the internship and meets the requirements, they will need to complete the [Petition for Course Exemption](#).

Once the student has started their internship, they will receive a survey to complete, verifying their supervisor's contact information as well as a skills evaluation.

At the end of a student's internship, their Career Advisor will request that their supervisor complete an evaluation form about their internship performance. Students are also required to complete an evaluation survey about the internship experience and how the role aligned with the educational goals of the program.

If you do not successfully complete an eligible internship along with the supervisor verification and survey, you will not fulfill your internship requirement necessary for graduation.

8.2. International Student (F-1/J-1) Internship Considerations

F-1 Status Students: You must apply for [Curricular Practical Training](#) (CPT) employment authorization for your summer internship if your degree program requires you to complete a 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.) Exception: Graduate students in programs that require an internship in their first year will be eligible for CPT the following summer if they are able to arrive in the United States for in-person instruction at the start of the spring semester. Processing CPT may take up to two weeks and you cannot begin employment until you receive authorization. Guidelines, forms, and instructions can be found at [Curricular Practical Training \(CPT\) - Office of International Education - Office of Enrollment Management - Carnegie Mellon University](#).

J-1 Status Students: You will need to apply for and obtain [Academic Training](#) before beginning your internship or fellowship. If your program sponsor on your DS-2019 is Carnegie Mellon University, follow these [steps](#) to obtain your Academic Training. If your program sponsor is another entity (such as Fulbright), you must contact the entity to learn the steps to receive your Academic Training.

9. Professional Seminar Course

Full-time Heinz College students in their first academic year will take a program specific Professional Seminar. This seminar is intended to equip the next generation of leaders in Public Policy and Information Systems with a comprehensive professional toolkit. By bridging academic rigor with strategic career development, this seminar empowers students to navigate the complex intersection of people, policy, and technology. Through active engagement and self-reflection, students will craft a unique professional narrative that prepares them to drive impact in the public, private, and non-profit sectors.

Students will receive impactful guidance from the academic advising and career advising teams, blended with sessions led by program directors, providing a holistic approach to student professional development.