INFORMATICS

Degree Requirements

Master of Science (M.S.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (https://gradschool.psu.edu/graduate-education-policies/)

The M.S. in Informatics requires a minimum of 30 credits at the 400, 500, 600, or 800 level, with at least 18 credits at the 500 or 600 series combined; 27 of the 30 credits must be earned at Penn State. 600 and 610 thesis research courses are only for students completing the thesis culminating experience. 602 will not be counted in fulfilling any specific credit requirement for an advanced degree. These 30 credits are distributed among the following requirements:

Core Courses (3-6 credits)

All candidates are expected to develop a broad understanding of the core constructs of people, information, technology, and the significant interactions among those elements by taking IST 504. Candidates may also take IST 505 to gain a deeper understanding of research design.

Specialization Courses (12-18 credits)

In consultation with his/her adviser, a candidate is expected to choose courses in one or more areas customized to support the thesis or scholarly paper. In addition to advanced courses in IST, a support area could be in cybersecurity, data science, law, business, education, engineering, the liberal arts, science, or any area that is linked to the information sciences. A list of suggested specialization courses is maintained by the graduate program office.

Research Methods (6 credits)

All candidates must develop a basic understanding of the research methods utilized in the information sciences, by taking at least two research methods courses offered in IST or elsewhere. The focus of the course must be on the methods being learned rather than application of some method to a research topic. A list of courses that will satisfy this requirement is maintained by the graduate program office.

Thesis or Scholarly paper (3-6 credits)

Students may choose a thesis or scholarly paper option. Students who choose the thesis option must register for 6 credits of IST 600 or IST 610, write a satisfactory thesis accepted by the master's committee, the head of the graduate program, and the Graduate School, and pass a thesis defense. The thesis should focus on a well-defined problem relevant to the information sciences. Students who choose the thesis option must also complete IST 505. Students who choose the scholarly paper option must register for 3 credits of IST 594 and complete the scholarly paper. The scholarly paper will be a focused piece of technical work that applies the student's expertise and knowledge base, and that is documented and presented as a scholarly paper report. Students who choose the scholarly paper option must complete at least 18 credits at the 500 level.

Doctor of Philosophy (Ph.D.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (https://gradschool.psu.edu/graduate-education-policies/)

The doctoral degree in Informatics requires a minimum of 32 credits, including 14 credits of foundational courses and 18 credits of research and specialization courses in consultation with the student's adviser to support research progress.

Code	Title	Credits
Required Courses		
IST 501	Interdisciplinary Research Design for Information Sciences and Technology	3
IST 590	Colloquium	2
Select 9 credits from the program-maintained list of foundational courses.		9
Select 18 credits of research methodology and specialization courses in consultation with your adviser to support progress on your dissertation research.		18
Total Credits		**32**

To complete a Ph.D. degree, students must in their first semester take the 3-credit introduction to interdisciplinary research methods course (IST 501) and one credit of graduate colloquium (IST 590). In their second semester, students must take a second credit of graduate colloquium. During their first two semesters, students must complete a selection of three foundational courses that provide interdisciplinary perspectives on research, a focus in the Qualifying Exam that takes place at the end of the first year.

As a complement to these first-year requirements, doctoral students must complete 18 credits of research methodology and specialization courses selected to increase proficiency in methods and topics relevant to their doctoral research agenda.

Finally, all students must be competent in the English language, with demonstrated skills in the communication of ideas both verbally and in writing commensurate with the requirement of scholarly and professional work. The Qualifying Examination will be used as an occasion to assess English proficiency and may result in a plan for remediation (including additional courses, mentoring, or experiences) for all students. Students must have completed 18 graduate credits before taking the Qualifying Exam and must pass the exam within three semesters. Students must pass the Ph.D. Comprehensive Examination after completion of most of their course work, usually after the student's second year in the program. A research-based dissertation must be completed under the direction of the Ph.D. committee, with the student submitting a dissertation proposal and defending that proposal in the defense examination. To earn the Ph.D. degree, doctoral students must write a dissertation that is accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).