

SYSTEMS (PHD)

Graduate School

Program Website (<https://www.engineering.cornell.edu/sys/systems-phd/>)

CIP: 14.2701 | HEGIS: 4904.00 | NYSED: 38142

Graduate Field

Systems Engineering (<https://catalog.cornell.edu/graduate-school/systems-engineering/>)

Program Description

Systems program students will pursue methodologies that are relevant for planning, optimizing, and executing multi-disciplinary solution efforts for design and operational problems in engineering, business, and the social sciences. The program also serves as a natural home for multidisciplinary research projects that require the cooperation of researchers from different domains. Cornell University has a long tradition of fostering projects that are large in scope. With its pursuit of methodologies that are relevant for planning, optimizing, and executing multi-disciplinary solution efforts and its focus on the study of the structure and behavior of complex systems, the program provides the methodological foundation for carrying out such projects. This degree is intended for students who are interested in a research career in Systems Science and Engineering as opposed to our MEng program which is intended for students interested in working in applications after graduation.

Concentrations

- Systems Engineering
- Systems Engineering (minor)

Program Information

- Instruction Mode: In Person
- Location: Ithaca, NY
- Minimum Credits for Degree: 107

Program Requirements

- Minimum Semesters for Degree: 8

Graduate School Milestones

- Responsible Conduct of Research Training: Required
- Open Researcher and Contributor ID (ORCID): Required
- Student Progress Reviews (SPR) begin: Second Year
- Examination for admission to candidacy (A Exam): Third Year
- Defense of Dissertation (B Exam): Fifth Year

Field Specific Milestones

- Qualifying Examination (Q Exam): First Year

Course Requirements

Additional course requirements may be set by the student's Special Committee. Program specific requirements that apply to all students are included below.

Year 1 and Year 2 (Fall)

- SYSEN 6000 Foundations of Complex Systems
- SYSEN 6150 Model Based Systems Engineering
- SYSEN 8000 Systems Doctoral Colloquium

Year 1 and Year 2 (Spring)

- SYSEN 8100 Systems Seminar Series - PhD

University Graduation Requirements Requirements for All Students

In order to receive a Cornell degree, a student must satisfy academic and non-academic requirements.

Academic Requirements

A student's college determines degree requirements such as residency, number of credits, distribution of credits, and grade averages. It is the student's responsibility to be aware of the specific major, degree, distribution, college, and graduation requirements for completing their chosen program of study. See the individual requirements listed by each college or school or contact the college registrar's office (<https://registrar.cornell.edu/service-resources/college-registrar-directory/>) for more information.

Non-academic Requirements

Conduct Matters. Students must satisfy any outstanding sanctions, penalties or remedies imposed or agreed to under the Student Code of Conduct (Code) or Policy 6.4. Where a formal complaint under the Code or Policy 6.4 is pending, the University will withhold awarding a degree otherwise earned until the adjudication process set forth in those procedures is complete, including the satisfaction of any sanctions, penalties or remedies imposed.

Financial Obligations. Outstanding financial obligations will not impact the awarding of a degree otherwise earned or a student's ability to access their official transcript. However, the University may withhold issuing a diploma until any outstanding financial obligations owing to the University are satisfied.

Learning Outcomes

- Breadth in understanding of complex systems
- Understanding and ability to apply methodologies to design, model, and optimize complex systems
- Cross disciplinary breath
- Ability and success in applying systems approaches via their PhD thesis to complex, multi-disciplinary research problems in some area of complex systems