SYSTEMS ENGINEERING (MENG)

College of Engineering

Program Website (https://www.engineering.cornell.edu/sys/meng/)

CIP: 14.2701 | **HEGIS:** 0999.00 | **NYSED:** 24754

Program Description

Systems engineering boasts a multidisciplinary approach to problem-solving, focusing on designing, managing, and optimizing complex systems. It involves understanding the interactions between different components and ensuring the entire system functions efficiently, effectively, and safely. This field is essential for projects in various industries, including aerospace, defense, healthcare, and manufacturing

The Master of Engineering (M.Eng) in Systems Engineering program (both on-campus and distance learning) is for students who want to specialize in designing, implementing, and managing complex systems to benefit society. This includes fields like manufacturing, healthcare, urban transportation, and renewable energy. Students can also pursue specific pathways to focus on areas like energy systems or health systems engineering. There is great flexibility for students to choose electives that align with their interests and goals. The core Systems Engineering courses are continuously evolving to accommodate industry expectations, student needs, and to maintain the multidisciplinary flavor which forms the very basis of this program.

The Systems Engineering M.Eng. program has two cohorts of students: traditional on-campus students and distance learning students.

- On-campus students are full-time and typically complete their program in two semesters, with a wide array of courses to choose from. The program allows for on-campus students to combine the core courses with chosen electives that will emphasize their interests, educational and career goals.
- Distance Learning students are professionals currently working in industry and are enrolled in the M.Eng. program part-time. The typical time frame for these students to complete the requirements is two to three years. Course content is the same as for on-campus students, with the addition of two one-week on-campus modules. This format of the M.Eng. degree can be earned virtually, making it perfect for the busy professional who wants to earn their degree on a part-time basis. Content delivery is achieved through synchronous and asynchronous technologies. Distance Learning students interact with on-campus students in many of their classes and coursework, which can facilitate the learning process for both groups of students.

Program Information

- Instruction Mode: In Person; Distance Education
- Location: Ithaca, NY
- Minimum Credits for Degree: 30

Program Requirements

On Campus Students

Code	Title	Hours
Core Courses		
SYSEN 5100	Model Based Systems Engineering (crosslisted)	4
SYSEN 5200	Systems Analysis Behavior and Optimization (crosslisted)	3
SYSEN 5900	Systems Engineering Design Project	1-6
SYSEN 5930	Project Management and Leadership for Complex Systems (or)	4
or CEE 5900	Project Management	
Electives		
Modeling and Analysis		3-4
Application		3-4
Management (no more than one course taken)		3-4
Seminar: A maximum of two courses may come from this group, and no more than one course from this group may be taken per semester.		

Distance Learning Students

Code	Title	Hours
Core Courses		
SYSEN 5100	Model Based Systems Engineering (crosslisted)	4
SYSEN 5200	Systems Analysis Behavior and Optimization (crosslisted)	3
SYSEN 5900	Systems Engineering Design Project	1-6
SYSEN 5930	Project Management and Leadership for Complex Systems	4
or CEE 6910	Project Management	
SYSEN 5920	Systems Engineering Management for Virtual Teams	1
SYSEN 5940	Creativity and Innovation within Systems Engineering	1
Electives		
Modeling and Analysis		3-4
Application		3-4
Management (no more than one course taken)		3-4
Seminar: A maximum of two courses may come from this group, and no more than one course from this group may be taken per semester.		

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.

Graduation Requirements for Master of Engineering Degree (M.Eng.) Programs

Requirements

The following are general requirements for graduation that apply to all Master of Engineering degrees offered on the Ithaca campus. The individual program pages provide additional information about discipline-specific requirements.

Credits and Residency Units

- Satisfactory completion of 30 technical credits, of which:
  - At least 21 credits must be earned at Cornell. (Some M.Eng. programs allow up to 9 transfer credits of letter-graded coursework completed outside of Cornell to be applied to the M.Eng. degree.)
  - At least 12 credit hours must be in coursework from the home M.Eng. program (as determined by the program).
  - A maximum of two credit hours graded on an S/U basis may be included.
- The credit hours of any course in which a student receives a grade below C- will not count toward the Master of Engineering degree.
- Students must maintain a course load of at least 12 credit-bearing hours[1] each semester.
- Students may not enroll in more than 20 credit-bearing hours per semester.
- Students must complete two full-time residency units[1] (semesters) as registered M.Eng. students. Winter and summer sessions do not count as residency units.

[1] Course load and residency unit exceptions apply for Distance Learning program students, employee degree program students, and Industrial Partnership Program students. The residency unit requirement is one full-time registered semester for Early Admit M.Eng. students and certain Cornell MPS/MS/PhD student transfers.

Courses

- Only program-approved courses at the 5000 level and above may count toward the M.Eng. degree.
- Courses covering subject matter previously taken at Cornell may not be repeated for credit.
- Satisfactory completion of an engineering design project bearing 3 or more credit hours and including a formal written report.

Other Requirements

- A grade-point average of 2.50 or above is required across all Cornell courses which count for credit towards the M.Eng. degree.
- Students must complete all degree requirements within four calendar years of their first enrollment in the M.Eng. program (six years for distance learning students), inclusive of any leaves of absence.
- Students must complete the M.Eng. Exit Survey prior to graduation.