

**MASTER OF ENGINEERING IN****Computer and Systems Engineering**

Computer and Systems Engineering is the fastest-growing branch of engineering. Rensselaer's Electrical, Computer and Systems Engineering Department offers several courses specifically geared toward working professionals that provide a concentration in networking and software engineering. Students may also take courses in management, manufacturing, or computer science to satisfy a breadth requirement. The Master of Engineering degree in Computer and Systems Engineering provides the tools needed for the success of professional engineers.

**ADMISSION REQUIREMENTS**

- Bachelor of Science degree in computer engineering, electrical engineering, or computer science from an accredited undergraduate institution
- Undergraduate coursework or work experience in programming, computer organization, computer architecture, discrete mathematics, data structures, probability, and signals and systems
- Undergraduate GPA of 3.2 or higher
- Grades of "B" or better in courses completed since bachelor's degree
- GRE required
- TOEFL score of 570 or above (required for international students)
- Completed application form
- Official transcripts for all undergraduate and graduate work
- Statement of background and goals as it applies to the program
- Two letters of recommendation
- Resume

**GRADUATION REQUIREMENTS**

- Matriculated status
- Approved Plan of Study and worksheet
- At least 18 credits must be at the 6000 level
- At least 21 credits must be from Electrical, Computer, and Systems Engineering (up to 6 of these credits can be from related technical areas with the approval of the faculty adviser, e.g., Computer Science, Electric Power Engineering, Materials Engineering, Physics, etc.)
- Minimum 3.0 GPA; minimum of 30 credits

**PLAN OF STUDY**

(minimum of 30 credit hours, must also conform to the graduation requirements listed above)

**I. Concentration Courses (9-10 credits)**

Select at least three courses

ECSE-4670	Computer Communication Networks
ECSE-4750	Computer Graphics
ECSE-6600	Internet Protocols
ECSE-6660	Broadband and Optical Networking
ECSE-6770	Software Engineering I
ECSE-6780	Software Engineering II

**II. Two Course Sequence to Provide Breadth (6-7 credits)**

Must come from courses outside of, and not directly related to, Electrical, Computer, and Systems Engineering and must be approved in advance by the faculty adviser.

Examples include, but are not limited to:

DSES-6110	Introduction to Applied Statistics
DSES-6230	Quality Control and Reliability
MGMT-6450	Manufacturing Systems Management
MANE-6800	Manufacturing Systems Integration

**III. Electives (15-16 credits)**

At least two must come from Electrical, Computer, and Systems Engineering (ECSE) to meet the required 15 credits in ECSE.

Select five courses, possible options include:

CISH-6120	Distributed Database Systems
CISH-6220	Lans, Mans, and Internetworking
CISH-6510	Web Application Design and Development
CSCI-4220	Network Programming
CSCI-4380	Database Systems
CSCI-6140	Computer Operating Systems
ECSE-4670	Computer Communication Networks
ECSE-4750	Computer Graphics
ECSE-6600	Internet Protocols
ECSE-6660	Broadband and Optical Networking
ECSE-6770	Software Engineering I
ECSE-6780	Software Engineering II

NOTE: Students interested in applying for a research-oriented M.S. degree should notify their Rensselaer point of contact for details on admission, curriculum, and graduation requirements.