

MASTER OF SCIENCE IN THE FIELD OF TELECOMMUNICATIONS ENGINEERING

The master of science in telecommunications engineering, which is offered by the department of electrical and computer engineering, is designed to help students understand and apply the fundamentals of telecommunications engineering, including topics such as computer networking, network architectures and protocols, and telecommunications security. In addition, students have the option to take courses on optical networking, wireless networking, and big data and cloud computing.

More information is available on the departmental website (<https://www.ece.seas.gwu.edu/master-science-telecommunications-engineering/>).

ADMISSIONS

Admission deadlines:

Fall - January 15
Spring - September 1
Summer - March 1 (non-F1
visa seeking applicants)

Standardized test scores:

The Graduate Record Examination (GRE) is required of all applicants. (Institution code 5246)
The Test of English as a Foreign Language (TOEFL), the academic International English Language Testing System (IELTS), or the PTE Academic is required of all applicants except those who hold a bachelor's, master's, or doctoral degree from a college or university in the United States or from an institution located in a country in which English is *the* official language, provided English was the language of instruction.

Minimum scores:

- Academic IELTS: an overall band score of 6.0 with no individual score below 5.0; applicants requesting funding consideration must have an overall band score of 7.0 with no individual score below 6.0; or
- TOEFL: 550 on paper-based or 80 on Internet-based; applicants requesting funding consideration must have 600 on paper-based; or 100 on Internet-based; or
- PTE Academic: 53; applicants requesting funding consideration must have 68.

Recommendations required: Two (2) recommendations required. If possible, one recommendation should be from your advisor at the institution from which you earned your highest degree.

Prior academic records:

Transcripts are required from all colleges and universities attended, whether or not credit was earned, the program was completed, or the credit appears as transfer credit on another transcript. Unofficial transcripts from all colleges and universities attended must be uploaded to your online application. Official transcripts are required **only** of applicants who are offered admission.

If academic records are in a language other than English, a copy in the original language and an English language translation must be uploaded. Transcript evaluations should not be uploaded. Applicants who have earned a degree from an Indian university are required to submit individual semester marksheets.

Statement of purpose:

In an essay of 250 to 500 words, state your purpose in undertaking graduate study at The George Washington University; describe your academic objectives, research interests, and career plans; and discuss your related qualifications, including collegiate, professional, and community activities, and any other substantial accomplishments not already mentioned.

Additional requirements:

Bachelor's degree with a GPA of at least 3.0 on a 4.0 scale for the last 60 hours of coursework. Applicants must hold a bachelor's degree in electrical engineering, computer engineering, or computer science and be adequately prepared in the basic physical sciences and in mathematics. Students with a bachelor's degree in another field and a basic knowledge of (a) mathematics and (b) electrical engineering, computer engineering, or computer science may be admitted, with a set of deficiency courses to be determined by the student's advisor. All applicants must submit a resumé or CV.

International applicants only: Please review International Applicant Information (<https://graduate.admissions.gwu.edu/international-student-application-requirements/>) carefully for details on required documents, earlier deadlines for applicants requiring an I-20 or DS-2019 from GW.

For more information on the admission process, please visit the SEAS Frequently Asked Questions page. (<http://graduate.seas.gwu.edu/apply/faq/>)

Contact for questions:

engineering@gwu.edu - 202-994-1802 (phone) - 202-994-1651 (fax)
9:00 - 5:00 pm, Monday through Friday

REQUIREMENTS

The following requirements must be fulfilled:

30 credits are required for the degree. Non-thesis and thesis options are available. For the thesis option, 6 of these credits are taken in ECE 6998 and ECE 6999.

Colloquium requirement: In addition to required coursework, students must attend five non-credit bearing colloquia as part of their program of study. Each colloquium attended is verified by a faculty member also in attendance. After attending five colloquia, the student must submit to the department prior to applying for graduation a colloquium attendance form signed by the faculty advisor.

Code	Title	Credits
Required		
ECE 6035	Introduction to Computer Networks	
ECE 6550	Network Architectures and Protocols	
ECE 6565	Telecommunications Security	
ECE 6575	Optical Communication Networks	
ECE 6580	Wireless Networks	

Two of the following:

ECE 6005	Computer Architecture and Design	
ECE 6015	Stochastic Processes in Engineering	
ECE 6130	Big Data and Cloud Computing	
ECE 6560	Network Performance Analysis	
ECE 6570	Telecommunications Security Protocols	

Required for thesis option

ECE 6998	Thesis Research I	
ECE 6999	Thesis Research II	

Electives*

Non-thesis option—9 credits in elective courses; thesis option
—3 credits in elective courses.

*Normally, no more than two courses taken outside the Department of Electrical and Computer Engineering may be counted toward the requirements for the degree. Courses taken outside the department must have prior approval from the student's faculty advisor. In addition, no more than three 3000- or 4000-level ECE courses that have been approved for graduate credit may be counted toward the requirements for the degree.

Educational Planner

In consultation with an academic advisor, each student must develop an Educational Planner through DegreeMAP that governs the student's plan of study. The Educational Planner should be established soon after matriculation and must be completed before the end of the student's first semester. The Educational Planner must be approved by the advisor.

Visit the program website (<https://www.ece.seas.gwu.edu/graduate-programs/>) for additional information.