

ENGINEERING (ENGR)

100 Level Courses

ENGR 107: *Introduction to Engineering.* 2 credits.

Introduces engineering profession fundamentals and problem-solving. Topics include description of engineering disciplines, functions of the engineer, professionalism, ethics and registration, problem solving and representation of technical information, estimation and approximations, and analysis and design. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). Limited to two attempts.

Registration Restrictions:

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

ENGR 110: *Engineering, Computing, and Social Justice.* 3 credits.

In this interactive, discussion-based course students will have the opportunity to explore the relationships between engineering, computing, and social justice through personal reflection and historical and contemporary reviews of texts and case studies. The course begins with the foundations of engineering design, computing technologies, and social justice while offering students' critical engagement through interdisciplinary readings that challenge engineering and digitalization mindsets. This is reinforced through discussions with practitioners, educators, and researchers in the field. Then the course helps students to understand what constitutes social justice in different areas of social life and the role that engineers, technologists, and the respective fields might play in these. Finally, the course gives students an understanding of why and how engineering and computing has been aligned and/or divergent from social justice issues and causes. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). Limited to two attempts.

Schedule Type: Lecture

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

300 Level Courses

ENGR 395: *Engineering Internship.* 0-3 credits.

Students will participate in experiential learning in an industrial setting. Students must identify work opportunity and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). May be repeated within the degree for a maximum 6 credits.

Recommended Prerequisite: Completion of at least 30 credit hours.

Registration Restrictions:

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Internship

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

ENGR 396: *Engineering Co-Op I.* 0-3 credits.

1st Semester of a multi-semester co-operative education experience. Students will apply concepts and theories from the classroom to an industrial setting. Students must identify work opportunity and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). Limited to two attempts.

Recommended Prerequisite: Completion of at least 30 credit hours.

Registration Restrictions:

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Lecture

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

ENGR 397: *Engineering Co-Op II.* 0-3 credits.

Second Semester of a multi-semester co-operative education experience. Students will apply concepts and theories from the classroom to an industrial setting. Students must continue employment from ENGR 396 and seek advisor approval prior to registering. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). Limited to two attempts.

Registration Restrictions:

Required Prerequisite: ENGR 396^C.
^C Requires minimum grade of C.

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Internship

Grading:

This course is graded on the Satisfactory/No Credit scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

ENGR 398: *Applied Engineering Abroad.* 3 credits.

Introduces students to applications of engineering processes outside USA. The students will gain hands-on project management, critical thinking, intercultural and career skills by exploring engineering aspects such as auto assembly, airliner manufacturing, metropolitan infrastructure, and bridge designs. By visiting technology museums, students will learn to appreciate the rich history of the country's technology and manufacturing. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). Limited to two attempts.

Mason Core: Global Understanding (<http://catalog.gmu.edu/mason-core/>)

Registration Restrictions:

Enrollment limited to students with a class of Junior, Senior Plus or Senior.

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Internship

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

400 Level Courses

ENGR 498: *Independent Study in Engineering.* 1-3 credits.

Directed self-study of special topics of current interest in ENGR. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). May be repeated within the term for a maximum 6 credits.

Specialized Designation: Topic Varies

Registration Restrictions:

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: IND/INT #1, IND/INT #2, IND/INT #3, IND/INT #4, IND/INT #5, IND/INT #6, IND/INT #7, IND/INT #8, IND/INT #9, Independent Study

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)

ENGR 499: *Special Topics in Engineering.* 0-4 credits.

Topics of special interest to undergraduates. Notes: May be repeated if topics substantially different. Offered by Electrical & Comp. Engineering (<http://catalog.gmu.edu/colleges-schools/engineering-computing/engineering/electrical-computer/small-satellite-engineering-graduate-certificate/>). May be repeated within the term for a maximum 11 credits.

Specialized Designation: Topic Varies

Registration Restrictions:

Students with the terminated from CEC major attribute may **not** enroll.

Schedule Type: Lec/Sem #1, Lec/Sem #2, Lec/Sem #3, Lec/Sem #4, Lec/Sem #5, Lec/Sem #6, Lec/Sem #7, Lec/Sem #8, Lec/Sem #9, Lecture, Sem/Lec #10, Sem/Lec #11, Sem/Lec #12, Sem/Lec #13, Sem/Lec #14, Sem/Lec #15, Sem/Lec #16, Sem/Lec #17, Sem/Lec #18

Grading:

This course is graded on the Undergraduate Regular scale. (<http://catalog.gmu.edu/policies/academic/grading/>)