

**GEORGE MASON UNIVERSITY
VOLGENAU SCHOOL OF ENGINEERING
B.S. DEGREE IN CIVIL AND INFRASTRUCTURE ENGINEERING
(1300 Nguyen Engineering Building, 703-993-1675)
<http://civil.gmu.edu/>
2018 - 2019 CATALOG**

	<u>Department(s) & Course #(s)</u>	<u>Completed/ Grade(s)</u>	<u>Needed</u>
<u>MASON CORE REQUIREMENTS (21)</u>			
a. Written Communication: ENGH 101 (100), ENGH 302 Natural Science or Multi Sections Only (C or better) (3,3)			
b. Oral Communication: COMM 100 or 101 (3)		_____	_____
c. Quantitative Reasoning (satisfied by MATH 113)			
d. Literature (3)	_____	_____	_____
e. Arts (3)*	_____	_____	_____
f. Western Civilization (HIST 100, 125, or acceptable transfer course)(3)*	_____	_____	_____
g. ECON 103 (3)		_____	_____
h. Natural Science (satisfied by CHEM 251; PHYS 160/161 and 260/261)			
i. Global Understanding (3)*	_____	_____	_____
j. Information Technology (satisfied by CDS 130)			
k. Synthesis (satisfied by completion of CEIE 490)			

Go to: <http://catalog.gmu.edu/mason-core/> to link to information on Mason Core requirements.

*Student must satisfy Mason Core requirements in two of these three areas: Arts, Global Understanding, and Western Civilization. The two additional Mason Core areas to be satisfied must be approved by the CEIE faculty advisor with the goal of best meeting the Mason Core needs of the student.

MATHEMATICS AND BASIC SCIENCES (33 credit hours required)

a. MATH 113, 114 (4,4)			
b. MATH 213, 214 (3,3)		_____	_____
c. CHEM 271/272 or CHEM 211/213 (4)		_____	_____
d. PHYS 160, 161 (3,1)		_____	_____
e. PHYS 260, 261, 266 (3,1,1)		_____	_____
f. STAT 344, BIOL 107 or 177 (3, 3)		_____	_____

ENGINEERING SCIENCES (66 credit hours required)

a. ENGR 107, CDS 130 (2,3)			
b. CEIE 203, CEIE 210 (3,3)		_____	_____
c. CEIE 240, CEIE 301 (writing intensive course) (3,3)		_____	_____
d. CEIE 304, CEIE 310 (0,3)		_____	_____
e. CEIE 311, CEIE 331 (3,3)		_____	_____
f. CEIE 340, CEIE 355 (3,3)		_____	_____
g. CEIE 360, CEIE 370 (3,3)		_____	_____
h. CEIE 404, CEIE 409 (0,3)		_____	_____
i. CEIE 490 (3)		_____	_____
j. CEIE technical electives (list course numbers) (24)			
1. <u>CEIE _____</u>	2. <u>CEIE _____</u>		
3. <u>CEIE _____</u>	4. <u>CEIE _____</u>	_____	_____
5. <u>CEIE _____</u>	6. <u>CEIE _____</u>	_____	_____
7. <u>CEIE _____</u>	8. <u>CEIE _____</u>	_____	_____

A grade of C or better is required in all MATH, science, and Volgenau School of Engineering courses.

MINIMUM 120 HOURS (including Minimum 45 UPPER DIVISION HOURS) to GRADUATE

This planning form is intended to be used in consultation with your academic advisor and reflects the requirements for the 2018 - 2019 Catalog; the University Catalog is the official reference for program requirements.



Volgenau School of Engineering

CIVIL & INFRASTRUCTURE ENGINEERING, B.S. 2018 - 2019

The George Mason University Sid and Reva Dewberry Department of Civil, Environmental, and Infrastructure Engineering (CEIE) offers a Bachelor of Science in Civil and Infrastructure Engineering (CIE) that prepares graduates to practice across the spectrum of civil engineering. Our degree program provides the skills needed to identify solutions that address the most pressing civil infrastructure needs of our built environment. These include: transportation, water resources, environment, structural, geotechnical, construction engineering, and land development. The curriculum focuses on educating students not only in the science and application of engineering tools, but in their integration for engineering practice. Students are trained to conceive, develop, design, construct, maintain and renew these systems in a complex urban environment, whether they are working in the Washington, DC metropolitan area, or the megacities of Asia; whether they are addressing the small towns of America's heartland or the villages of the developing world. The Civil and Infrastructure Engineering program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Who do CIE grads work for and what do they do?

A CIE graduate is expected to be competent in applying both the art and science of engineering, adept at understanding and using the tools available, and capable of examining problems from a variety of perspectives. He or she should also be able to assess objectives and concerns, identify potential solutions, analyze options, and identify and execute a solution. CIE graduates work for organizations including: construction and design-build firms, Departments of Transportation, consulting engineers, water, wastewater, and power utilities, local and federal government, land development firms, and information technology firms.

In many cases, CIE alumni return to Mason to pursue advanced degrees or continue their education at other prestigious graduate schools including Stanford University, Texas A&M University, University of California, University of Florida, University of Virginia, and Virginia Tech.

Local Industry Participation, Scholarships & Internships

The Civil Engineering Institute (CEI) is a nonprofit corporation supporting Mason's CIE program. CEI was founded by the local engineering industry in 1989. Among many other things, CEI provides financial support to CIE students through scholarships and paid summer internships.

About the Degree

How we teach our courses is just as important as what we teach. In our classes, we provide students with a variety of computer-based analytical and design tools widely used in the engineering industry. The philosophical thread that runs through the entire Civil & Infrastructure Engineering experience is that engineering is fun, is challenging, demands cooperation and skill, and is of vital importance to society. Furthermore, we have developed a close relationship with the engineering industry to ensure that sound professional practice is used in the classroom. This relationship ensures that our courses offer relevant engineering experiences and exposure to industry leaders.

CIVIL & INFRASTRUCTURE ENGINEERING, B.S.

2018-2019 Sample Schedule for Undergraduate Civil Engineering Majors

First Semester		Second Semester	
MATH 113 Analytical Geometry & Calculus I	4	MATH 114 Analytical Geometry & Calculus II	4
CHEM 211 & CHEM 213 OR CHEM 271 & CHEM 272 Gen Chem/Engr	4	PHYS 160 University Physics I	3
ENGR 107 Introduction to Engineering	2	PHYS 161 University Physics I Laboratory	1
ECON 103 Contemporary Microeconomic Principles	3	CDS 130 Computing for Scientists	3
BIOL 107 Intro Biology II or BIOL 177 Ecological Applications	3	**** Mason Core ² (ENGH 100 or 101)	3
Total	16	TOTAL	14
Third Semester		Fourth Semester	
CEIE 203 Geomatics & Engineering Graphics	3	CEIE 210 Statics	3
MATH 213 Analytical Geometry & Calculus III	3	CEIE 240 Hydraulics	3
PHYS 260 University Physics II	3	MATH 214 Elementary Differential Equations	3
PHYS 261 University Physics II Laboratory	1	ENGH 302 Adv Comp (Natural Sciences OR Multi- Disciplinary Section)***	3
**** Mason Core ² (Literature, required prerequisite for ENGH 302)	3	STAT 344 Probability & Statistics for Engineers	3
**** Mason Core ²	3		
TOTAL	16	TOTAL	15
Fifth Semester		Sixth Semester	
CEIE 301 Engineering & Econ Models in Civil Engr	3	CEIE 311 Structural Analysis	3
CEIE 304 Junior Engineering Competency Exam	0	CEIE 355 Environmental Engineering and Science	3
CEIE 310 Mechanics of Materials	3	CEIE 360 Introduction to Transportation Engineering	3
CEIE 331 Soil Mechanics	3	CEIE 370 Construction Systems	3
CEIE 340 Water Resources Engineering	3	**** Mason Core ²	3
PHYS 266 Introduction to Thermodynamics	1		
**** Mason Core ²	3	TOTAL	15
TOTAL	16		
Seventh Semester		Eighth Semester	
CEIE 404 Senior Engineering Competency Examination	0	CEIE 490 Senior Design Project	3
CEIE 409 Professional Practice & Management in Engr	1	CEIE 4xx Technical Core Elective ³	3
CEIE 4xx Technical Core Elective ³	3	CEIE 4xx Technical Elective ⁴	3
CEIE 4xx Technical Core Elective ³	3	CEIE 4xx Technical Elective ⁴	3
CEIE 4xx Technical Core Elective ³	3		
CEIE 4xx Technical Elective ⁴	3	TOTAL	12
CEIE 4xx Technical Elective ⁴	3		
TOTAL	16		

² * <http://catalog.gmu.edu/mason-core> Mason Core Categories: One course from each: Oral Communication, ENGH101, Literature, and in two of three areas of Arts, Global Understanding and Western Civilization/World History. VSE students do not need to seek out Science, Math, and IT categories as they are built into the major curriculum.

*** ENGH 101 and Mason Core-Literature must be completed before taking ENGH 302.

³A total of eight CEIE Technical Elective courses must be selected. The four Core Electives must be selected from four different Civil Engineering specialty areas: structural engineering (CEIE 412 or 413 or 414), water resources engineering (CEIE 440 or 442), environmental engineering (CEIE 450 or 453), transportation engineering (CEIE 461 or 462), construction (CEIE 471 or CEIE 472) and geotechnical (CEIE 432 or 435).

⁴ The fifth, sixth and seventh CEIE Technical Elective course may be selected from any CEIE 4xx course. The eighth CEIE technical Elective course may be selected from any CEIE 4xx course or related advanced (400-level) science or engineering course approved by the student's advisor.

We invite requests for additional information. Please contact:

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