

**GEORGE MASON UNIVERSITY
VOLGENAU SCHOOL OF ENGINEERING
B.S. DEGREE IN MECHANICAL ENGINEERING
(1856 Nguyen Engineering Building, 703-993-1712)
<http://volgenau.gmu.edu/web/volgenau/bachelor-degrees>
2018 - 2019 CATALOG**

	<u>Department(s) & Course #(s)</u>	<u>Completed/ Grade(s)</u>	<u>Needed</u>
<u>MASON CORE REQUIREMENTS (24)</u>			
a. Written Communication: ENGH 101 (100), ENGH 302 Natural Science or Multi Section Only (C or better) (3,3)			
b. Oral Communication: COMM 100 or COMM 101 (3)			
c. Quantitative Reasoning (satisfied by completion of mathematics and basic sciences requirements)			
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 completion of mathematics and basic sciences requirements)			
i. Global Understanding (3)			
j. Information Technology (satisfied by completion of major requirements)			
k. Synthesis (satisfied by ME 444)			

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

MATHEMATICS, BASIC SCIENCES, and COMPUTER SCIENCE (36 credit hours required)

a. MATH 113, 114 (4,4)	a. _____	_____
b. MATH 213, 214 (3,3)	b. _____	_____
c. CHEM 271/272 (4) or CHEM 211/213 (3/1)	c. _____	_____
d. PHYS 160, 161 (3,1)	d. _____	_____
e. PHYS 260, 261 (3,1)	e. _____	_____
f. ME 351 (3)	f. _____	_____
g. CS 112 (4)	g. _____	_____
h. Mathematics/Science Elective (3) (from department's pre-approved list; list course)	h. _____	_____

ENGINEERING CREDITS (61 hours required)

a. ECE 330, ME 331 (3,3)	a. _____	_____
b. ME 151, ME 211 (2,3)	b. _____	_____
c. ME 212, ME 221 (3,3)	c. _____	_____
d. ME 231, ME 311 (3,1)	d. _____	_____
e. ME 313, ME 321 (3,1)	e. _____	_____
f. ME 322, ME 323 (3,3)	f. _____	_____
g. ME 341 or ME 342 (circle choice), ME 352 (3,3)	g. _____	_____
h. ME 432, ME 443 (4,3)	h. _____	_____
i. ME 444 (writing intensive course), ME 453 (3,2)	i. _____	_____
k. ME technical electives (from the department' list of pre-approved courses) (12)		
1. _____	1. _____	_____
2. _____	2. _____	_____
3. _____	3. _____	_____

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

Students are required to see their faculty advisor at least once each year to plan their curriculum.

MINIMUM 121 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

MECHANICAL ENGINEERING, B.S.

2018 - 2019

Today, the role of the mechanical engineer is ever expanding in order to find innovative solutions for contemporary problems, and to address problems yet to be identified. To meet the growing demands of worldwide energy needs spurred by population growth and dwindling supplies of fossil fuels, for instance, mechanical engineers seek innovations in nuclear energy, biofuels, wind, and tidal energies to build an energy portfolio that exploits these seemingly limitless resources. From design to manufacturing, an awareness of stealth threats to product realization – due to an ever present cyber threat – is in the minds of mechanical engineers. Now more mechanical engineers oversee the operations and management of large systems along with the fiscal and human resources needed to run them.

James Michener once said, “Scientists dream about doing great things. Engineers do them.” Mechanical engineers use science to advance technologies and to develop products for the benefit of society, in a discipline which dates back to the earliest of times in civilization. The major in mechanical engineering has three program education objectives, namely:

- Graduates have demonstrated success as a mechanical engineer or their chosen career field;
- Graduates have advanced their educational pursuits through graduate education, professional registration, or similar means;
- Graduates have advanced their careers by engaging in professional society participation and community service outreach

Degree Requirements

Degree requirements include 121 credits distributed in three main areas: mathematics and basic science, humanities and social sciences, and mechanical engineering. Students must complete all math, science and Volgenau School of Engineering courses presented as part of the required 121 credits for the degree with a grade of C or better.

2018-2019 Sample Schedule for Undergraduate Mechanical Engineering Majors

First Semester

CHEM 211& 213 OR CHEM 271 & 272	4
ECON 103 Contemp. Microeconomic Prin.	3
MATH 113 Analytic Geometry and Calculus I	4
Mason Core*	3
Total	14

Second Semester

CS 112 Intro to Computer Programming	4
MATH 114 Analytic Geometry and Calculus II	4
ME 151 Practicum in Engineering	2
PHYS 160 University Physics I	3
PHYS 161 University Physics I Lab	1
Total	14

Third Semester

MATH 213 Analytic Geometry and Calculus III	3
ME 211 Statics	3
PHYS 260 University Physics II	3
PHYS 261 University Physics II Lab	1
Mason Core*	3
Mason Core*	3
Total	16

Fourth Semester

MATH 214 Elem. Differential Equations	3
ME 212 Solid Mechanics	3
ME 221 Thermodynamics	3
ME 231 Dynamics	3
Mason Core*	3
Total	15

Fifth Semester

ECE 330 Circuit Theory	3
ME 311 Mechanical Experimentation I	1
ME 313 Material Science	3
ME 322 Fluid Mechanics	3
ME 341 or ME 342 Design Elective	3
ME 351 Analytical Methods in Engr	3
Total	16

Sixth Semester

ENGH 302 Adv Comp (Nat Sci section) ***	3
Math/Science Elective	3
ME 321 Mechanical Experimentation II	1
ME 323 Heat Transfer	3
ME 331 Mechatronics	3
ME 352 Entrepreneurship in Engineering	3
Total	16

Seventh Semester

ME 432 Control Engineering	4
ME 443 Mechanical Design I	3
ME 453 Developing the Societal Engineer	2
Technical Elective	3
Technical Elective	3
Total	15

Eighth Semester

ME 444 Mechanical Design II	3
Technical Elective	3
Technical Elective	3
Mason Core*	3
Mason Core*	3
Total	15

* <http://catalog.gmu.edu/mason-core> One course from each Mason Core Categories: ENGH 101, Oral Communication, Literature, Arts, Western Civilization/World History, and Global Understanding. VSE students do not need to seek out IT, Quantitative Reasoning, Natural Science, and Social & Behavioral Sciences categories as they are built into the major curriculum.

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

For more information about this program:

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