

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - DESIGN

Code	Title	Credit Hours
Wellness Requirement		
APPH 1040	Scientific Foundations of Health	2
	or APPH 10 The Science of Physical Activity and Health	
	or APPH 10 Flourishing: Strategies for Well-being and Resilience	
Core IMPACTS		
Institutional Priority		
CS 1371	Computing for Engineers	3
Mathematics and Quantitative Skills		
MATH 1552	Integral Calculus ²	4
Political Science and U.S. History		
HIST 2111	The United States to 1877	3
	or HIST 2111 The United States since 1877	
	or INTA 1200 American Government in Comparative Perspective	
	or POL 1101 Government of the United States	
	or PUBP 3000 American Constitutional Issues	
Arts, Humanities, and Ethics		
Any HUM		6
Communicating in Writing		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
Technology, Mathematics, and Sciences		
PHYS 2211	Principles of Physics I ²	4
PHYS 2212	Principles of Physics II	4
MATH 1551	Differential Calculus ²	2
MATH 1553	Introduction to Linear Algebra ²	2
	or MATH 1551 Linear Algebra	
	or MATH 1553 Linear Algebra with Abstract Vector Spaces	
Social Sciences		
Any SS		9
Field of Study		
CHEM 1310	Principles of General Chemistry for Engineers ⁶	4
ME 1670	Introduction to Engineering Graphics and Design	3
MATH 2551	Multivariable Calculus ²	4
MATH 2552	Differential Equations ²	4
MSE 2001	Principles and Applications of Engineering Materials	3
Major Requirements		
Economics Requirement ⁸		
Ethics Requirement ¹		
COE 2001	Statics ²	2
ME 2016	Computer Applications	3
ME 2110	Creative Decisions and Design	3
ME 2202	Dynamics of Rigid Bodies	3
ME 3017	System Dynamics	3

ME 3057	Experimental Methodology and Technical Writing	3
ME 3058	ME Systems Laboratory	3
ME 3322	Thermodynamics	3
ME 3340	Fluid Mechanics	3
ME 3345	Conduction and Radiation Heat Transfer	3
COE 3001	Mechanics of Deformable Bodies	3
ME 3210	Design, Materials, and Manufacture	3
ME 4182	Mechanical Design Engineering	3
	or ME 4723 Interdisciplinary Capstone Design	
Other Engineering Requirements		
ECE 3710	Circuits and Electronics	2
ECE 3741	Instrumentation and Electronics Lab	1
ISYE 3025	Essentials of Engineering Economy	1
MATH 3670	Probability and Statistics with Applications	3
	or ECE 3071 Prob/Stats for ECE	
	or ISYE 377 Statistics and Applications	
Design Concentration		
ME 3180	Machine Design ⁷	3
	or ME 4315 Energy Systems Analysis and Design	
Electives:		12
ME 4042	Interactive Computer-Aided Design and Computer-Aided Engineering	
ME 4171	Environmentally Conscious Design and Manufacturing	
ME 4193	Design and Materials Selection for Tribological Applications	
ME 3180	Machine Design ⁷	
	or ME 4315 Energy Systems Analysis and Design	
ME 4699	Undergraduate Research ⁵	
Vertically Integrated Project courses ⁵		
ME/BIOS/ BMED/ MSE/ISYE 4740	Biologically Inspired Design	
ME/NRE 4725	Probabilistic Risk Assessment	
ME/MSE 4790	Materials Selection and Design	
Free Electives		
Free Electives ^{3,4,5}		6
Total Credit Hours		129

No pass-fail courses allowed except for Ethics overlay requirement.

Student must earn a 2.0 GPA within Major Requirements and MSE 2001, ECE 3710, ECE 3741, and ISYE 3025.

If a course is repeated, only the latest grade is included in the calculation of the Major Requirements GPA.

¹ Students must complete one Ethics course during their program.

² Minimum grade of C required.

³ At least 3 credit hours in either the Concentration Electives or Free Electives must be a 3000-level or higher ME course. ME 3141, ME 3700,

ME 3720, ME 3743, ME 3744, ME 4699, ME 4741, ME 4742, ME 4753, and ME 4903 are not allowed.

⁴ Excludes CEE 2040, PHYS 2802, PHYS 2XXX (AP credit) and MGT 2250.

⁵ Up to 6 credit-hours of ME 4699 and VIP coursework *combined* can be counted toward the Design Concentration. Only 3 hours maximum of ME 4699 can be applied to the Concentration.

⁶ CHEM 1211K can substitute for CHEM 1310. CHEM 1211K and CHEM 1212K are recommended for pre-health students.

⁷ Students are required to take one of the design elective courses, ME 3180 or ME 4315, as part of the Mechanical Engineering curriculum. Both courses can be included in the Design Concentration; one is required and the other can be taken as a Design elective.

⁸ Students must complete one course from the following list that includes appropriate economic content relevant to the program: ECON 2100, ECON 2101, ECON 2105, or ECON 2106. Note that ECON 2100, 2101, 2105, 2106 may also be applied toward Core IMPACTS Social Science credit hours. You should discuss this with your academic advisor to ensure that you are taking the most efficient path to complete both areas.