

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING - DESIGN

Code	Title	Credit Hours
Wellness		
APPH 1040	Scientific Foundations of Health or APPH 10 The Science of Physical Activity and Health or APPH 10 Flourishing: Strategies for Well-being and Resilience	2
Core A - Essential Skills		
ENGL 1101	English Composition I	3
ENGL 1102	English Composition II	3
MATH 1552	Integral Calculus ²	4
Core B - Institutional Options		
CS 1371	Computing for Engineers	3
Core C - Humanities		
Any HUM		6
Core D - Science, Math, & Technology		
PHYS 2211	Introductory Physics I ²	4
PHYS 2212	Introductory Physics II	4
MATH 1551	Differential Calculus ²	2
MATH 1553	Introduction to Linear Algebra ² or MATH 1554 Linear Algebra or MATH 1555 Linear Algebra with Abstract Vector Spaces	2
Core E - Social Sciences		
Select one of the following:		3
HIST 2111	The United States to 1877	
HIST 2112	The United States since 1877	
INTA 1200	American Government in Comparative Perspective	
POL 1101	Government of the United States	
PUBP 3000	American Constitutional Issues	
Select one of the following:		3
ECON 2100	Economic Analysis and Policy Problems	
ECON 2101	The Global Economy	
ECON 2105	Principles of Macroeconomics	
ECON 2106	Principles of Microeconomics	
Any SS		6
Core F - Courses Related to Major		
CHEM 1310	General Chemistry 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
Ethics Requirement ¹		
Major Requirements		
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 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 4056	Mechanical Engineering Systems Laboratory	3
ME 4182	Mechanical Design Engineering	3

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

Design Concentration

ME 3180	Machine Design ⁷ or ME 4315 Energy Systems Analysis and Design	3
Electives:		12

ME 4042	Interactive Computer-Aided Design and Computer-Aided Engineering	
ME 4193	Design and Materials Selection for Tribological Applications	
ME 3180	Machine Design ⁷ or ME 43 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	

Free Electives

Free Electives ^{3,4,5}	6
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Total Credit Hours 129

No pass-fail courses allowed.

Student must earn a 2.0 GPA within Major Requirements and the following:

Code	Title	Credit Hours
MSE 2001	Principles and Applications of Engineering Materials	3
ECE 3710	Circuits and Electronics	2
ECE 3741	Instrumentation and Electronics Lab	1
ISYE 3025	Essentials of Engineering Economy	1

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.