MECHANICAL ENGINEERING (BS)

Contacts

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Program Website (https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/mechanical-engineering.html)

Program Description

- **STEM designated program**

The BSE Mechanical Engineering program, accredited by the Engineering Accreditation Commission of ABET, bestow graduates with a breadth of engineering skill and knowledge while facilitating technical depth in mechanical engineering design and manufacturing, energy and thermal-fluid sciences, mechanics, and mechatronics. Students graduate qualified to lead successful and productive careers in their discipline, work collaboratively with colleagues of other disciplines, and pursue Professional Engineering (PE) licensure, and graduate studies.

Learning Goals/Outcomes

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Curriculum: 4 Years, 127.5 Credits

Course	Title	Credits
First Year		
FYS 100	Pathways Seminar	1
WRIT 101	Writing Sem I: Written Comm.	3
AVIS 101	American Visions	3
DECF 102	Finding & Shaping Opportunity	3
CHEM 103 & 103L	Chemistry I and Chemistry I Lab	4
MATH 111	Calculus I	4
MATH 112	Calculus II	4
PHYC 201	Physics I	3
PHYC 201L	Physics I Lab	1
ENGR 101	Introduction to Engineering	3
ENGR 104	Introduction to Computing	3
ENGR 102	Engineering Drawing	3
	Credits	**35**
Second Year		
ADIV 2XX	American Diversity Placeholder	3
WRIT 201	Writing Seminar II:Multi Comm	3
DECS 2XX	DECSYS Placeholder	3
MATH 213	Calculus III	4
PHYC 203	Phys II: Waves, Elec, & Mag	3
PHYC 203L	Physics II Lab	1
MATH 225	Differential Equations	3
ENGR 215	Engineering Statics	3
ENGR 218	Engineering Dynamics	3
ENGR 301	Mechanics of Materials	3
ENGR 305	Engineering Statistics	3
	Credits	**32**
Third Year		
GDIV 2XX	Global Diversity Placeholder	3
ENGR 302	Design for Manufacturability	3
ENGR 311	Fluid Mechanics	3
ENGR 322	Fund. of Elect. Engineering I	3
ENGR 210	Intro to Materials Science	3
ENGR 308	Integrated Engr Product Dev. I	3
ENGR 314	Numerical Meths for Engineers	3
MENG 407	Thermodynamics	3
ENGR 405	Engineering Simulations	3
MENG 301	Machine Design	3
MENG 399	Mechanical Engin Design Sem	0.5
	Credits	**30.5**
Fourth Year		
ETHC 2XX	Ethics Course Placeholder	3
CGIS 300	Contemporary Global Issues	3
PHIL 499	Philosophies of the Good Life	3
DECM 300	Research Methods	3
MENG 427	System Dynamics and Controls	3
ENGR 498	Senior Design Project I	3
ENGR 303	Engineering Economics	3
MENG 405	Intro to Mechatronics	3
MENG 428	Heat Transfer	3
ENGR 499	Senior Design Project II	3
	Credits	**30**
	Total Credits	**127.5**