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, 127.5-129.5 Credits

Course	Title	Credits
First Year		
FYS 100	Pathways Seminar	1
WRIT 101	Writing Sem I: Written Comm.	3
AMST 114		3
MATH 111	Calculus I	4
CHEM 103 & 103L	Chemistry I and Chemistry I Lab	4
PHYC 201	Physics I	3
PHYC 201L	Physics I Lab	1
MATH 112	Calculus II	4
DECF 102	Finding & Shaping Opportunity	3
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	3
WRIT 201	Writing Seminar II:Multi Comm	3
DECS 2XX	Science (DECSYS)	3
ENGR 301	Mechanics of Materials	3
ENGR 305	Engineering Statistics	3
MATH 213	Calculus III	4
PHYC 203	Phys II: Waves, Elec, & Mag	3
PHYC 203L	Physics II Lab	1
ENGR 215	Engineering Statics	3
MATH 225	Differential Equations	3
ENGR 218	Engineering Dynamics	3
	Credits	**32**
Third Year		
ENGR 371	Special Topics	3
ENGR 302	Design for Manufacturability	3
ENGR 305	Engineering Statistics	3
ENGR 322	Fund. of Elect. Engineering I	3
ENGR 308	Integrated Engr Product Dev. I	3
ENGR 311	Fluid Mechanics	3
ENGR 314	Numerical Meths for Engineers	3
MENG 407	Thermodynamics	3
ENGR 210	Intro to Materials Science	3
MENG 399	Mechanical Engin Design Sem	0.5
MENG 301	Machine Design	3
	Credits	**30.5**
Fourth Year		
PHIL 499	Philosophies of the Good Life	3
ETHC 2XX	Ethics	3
ENGR 303	Engineering Economics	3
MENG 405	Intro to Mechatronics	3
MENG 427	System Dynamics and Controls	3
DECM 300	Research Methods	3
MENG 428	Heat Transfer	3
ENGR 498	Senior Design Project I	3
ENGR 499	Senior Design Project II	3
CGIS 300	Contemporary Global Issues	3
	Credits	**30**
	Total Credits	**127.5**