ENGINEERING (BSE)

Contacts

Program Director: Brian George, PhD
Email: Brian.George@jefferson.edu
215-951-2782
Campus: East Falls
Program Website (https://www.jefferson.edu/academics/colleges-schools-institutes/kanbar-college-of-design-engineering-commerce/school-of-design-engineering/academic-programs/engineering.html)

Program Description

- **STEM designated Program**

The BSE Engineering program at Jefferson is accredited by the Engineering Accreditation Commission of ABET. The program prepares graduates with a breadth of engineering skills and knowledge while developing specific expertise and analytical skills in an area of technical concentration, including Industrial and Systems Engineering, Textile Engineering, and Bioprocess Engineering. Through applied coursework culminating in a two-semester senior design project, the graduates gain hands-on, practical experience to obtain professional licensure, succeed in the industry, or pursue 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 - 128.5 Credits

Course	Title	Credits
First Year		
FYS 100	Pathways Seminar	1
AVIS 101	American Visions	3
WRIT 101	Writing Sem I: Written Comm.	3
CHEM 103	Chemistry I	3
CHEM 103L	Chemistry I Lab	1
MATH 111	Calculus I	4
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
PHYC 201	Physics I	3
PHYC 201L	Physics I Lab	1
	Credits	**35**
Second Year		
ADIV 2XX	American Diversity Placeholder	3
WRIT 201	Writing Seminar II:Multi Comm	3
DECS 2XX	DECSYS Placeholder	3
PHYC 203	Phys II: Waves, Elec, & Mag	3
PHYS 203L	Physics II Lab	1
MATH 213	Calculus III	4
ENGR 215	Engineering Statics	3
ENGR 305	Engineering Statistics	3
MATH 225	Differential Equations	3
ENGR 218	Engineering Dynamics	3
ENGR 301	Mechanics of Materials	3
	Credits	**32**
Third Year		
GDIV 2XX	Global Diversity Placeholder	3
ENGR 311	Fluid Mechanics	3
ENGR 322	Fund. of Elect. Engineering I	3
ENGR 210 or ENGR 304	Intro to Materials Science or Operations Research I	3
ENGR 308	Integrated Engr Product Dev. I	3
ENGR 314	Numerical Meths for Engineers	3
ENGR 405	Engineering Simulations	3
MENG 407	Thermodynamics	3
Engr. Concentration Courses		6
ENGR 399	Engineering Design Seminar	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
ENGR 498	Senior Design Project I	3
MENG 405	Intro to Mechatronics	3
ENGR 303	Engineering Economics	3
ENGR 499	Senior Design Project II	3
Engr. Concentration Courses		6
	Credits	**30**
	Total Credits	**127.5**