B.S.E. Engineering
B.S.E. Mechanical Engineering

Kanbar College | School of Design & Engineering

Jefferson
Thomas Jefferson University

Presentation Overview

- Engineering Program Description
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- Mechanical Engineering Program Description
- Mechanical Engineering Plan of Study
- Sample Student Work
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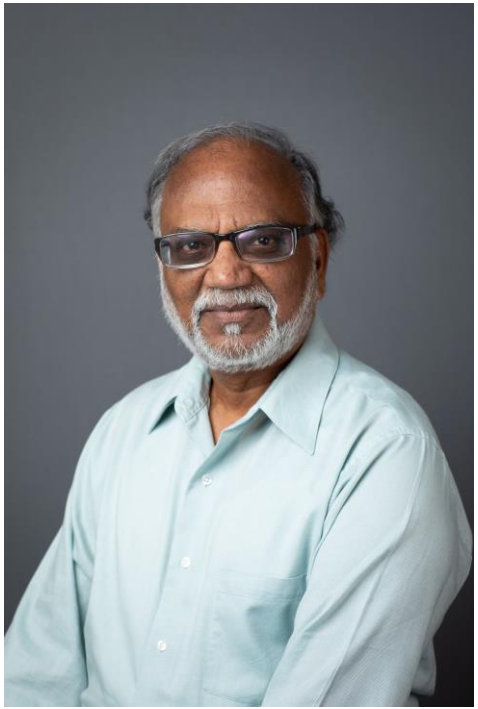

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PROGRAM DESCRIPTION

B.S.E. in Engineering

The B.S.E. in Engineering program at Thomas Jefferson University is accredited by the Engineering Accreditation Commission of **ABET**. The program will prepare you 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

You will begin developing science, math, and engineering analysis skills in foundational courses. As a sophomore, you will select your area of concentration.

Through applied coursework culminating with a two-semester senior design project, you will gain hands-on, real world experience allowing you to obtain professional licensure, succeed in industry, pursue graduate studies, or start a business in your specialized concentration or in general engineering practice.

PLAN OF STUDY

B.S.E. in Engineering | Total: 127.5 credits

First Year (35 credits)

Major Core
- Introduction to Engineering
- Introduction to Computing
- Engineering Drawing

DEC Core
- Integrative Design Process

Hallmarks Core
- Pathways Seminar
- Writing Seminar I
- Debating U.S. Issues
- Calculus I
- Physics I with Lab
- Chemistry I with Lab
- Calculus II

Second Year (35 credits)

Major Core
- Physics II with Lab
- Calculus III
- Engineering Statics
- Differential Equations
- Engineering Dynamics
- Engineering Statistics I
- Mechanics of Materials

DEC Core
- Systems: Scientific Understanding
- Framework: Business Models

Hallmarks Core
- Global Diversity or Global Citizenship
- Writing Seminar II

Third Year (29.5 credits)

Major Core
- Fundamentals of Electrical - Engineering I or Operations Research I
- Integrated Engineering Product Development
- Fluid Mechanics
- Numerical Methods for Engineers
- Thermodynamics and Heat Transfer I
- Engineering Design Seminar

[2] Engineering Concentration Courses

DEC Core
- Integrative Seminar: Ethnographic Research Methods

Hallmarks Core
- American Diversity
- Debating Global Issues

Fourth Year (28 credits)

Major Core
- Engineering Economics
- Operation Research I or Fundamentals of Electrical Engineering I
- Introduction to Mechatronics
- Senior Design Project I
- Senior Design Project II

[2] Engineering Concentration Courses

Hallmarks Core
- Capstone Folio Workshop
- Ethics

PROGRAM DESCRIPTION

B.S.E. in Mechanical Engineering

The B.S.E. in Mechanical Engineering program at Thomas Jefferson University is accredited by the Engineering Accreditation Commission of **ABET**. The program will prepare you with a breadth of engineering skills and knowledge while facilitating technical depth in vital mechanical engineering areas, including:

- Design and Manufacturing
- Energy and Thermal-Fluid Science
- Mechanics and Kinematics
- Control and Mechatronics

You will begin developing science, math, and engineering analysis skills in foundational courses, and progress to using modern computer aided design, and mathematical modeling tools. You will also gain experience using manufacturing equipment like metal machining and rapid prototyping equipment.

Engineering design is taught from the first semester and further strengthened in upper-level courses culminating in a two-semester senior design project. For example, mechanical engineering seniors designed, built, and tested a vortex tube cooler, which produced chilled air from a room temperature compressed air reservoir with no moving parts.

Upon graduation, you will be qualified to pursue professional engineering licensure (P.E.).

PLAN OF STUDY

B.S.E. in Mechanical Engineering | Total: 127.5 credits

First Year (35 credits)

Major Core
- Introduction to Engineering
- Introduction to Computing
- Engineering Drawing

DEC Core
- Integrative Design Process

Hallmarks Core
- Pathways Seminar
- Writing Seminar I
- Debating U.S. Issues
- Calculus I
- Physics I with Lab
- Chemistry I with Lab
- Calculus II

Second Year (35 credits)

Major Core
- Physics II with Lab
- Calculus III
- Engineering Statics
- Differential Equations
- Engineering Dynamics
- Engineering Statistics I
- Mechanics of Materials

DEC Core
- Systems: Scientific Understanding
- Framework: Business Models

Hallmarks Core
- Global Diversity or Global Citizenship
- Writing Seminar II

Third Year (29.5 credits)

Major Core
- Fundamentals of Electrical Engineering I
- Integrated Engineering Product Development
- Fluid Mechanics
- Numerical Methods for Engineers
- Thermodynamics and Heat Transfer I
- Introduction to Material Science
- Machine Design
- Engineering Design Seminar

DEC Core
- Integrative Seminar: Ethnographic Research Methods

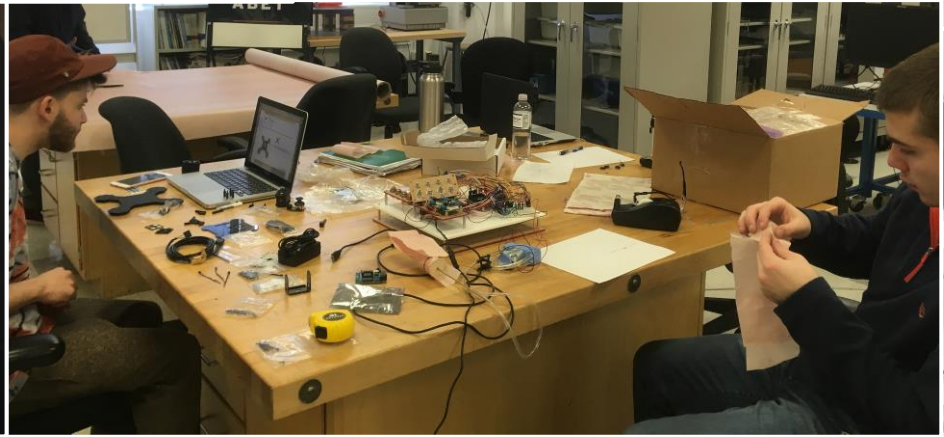
Hallmarks Core
- American Diversity
- Debating Global Issues

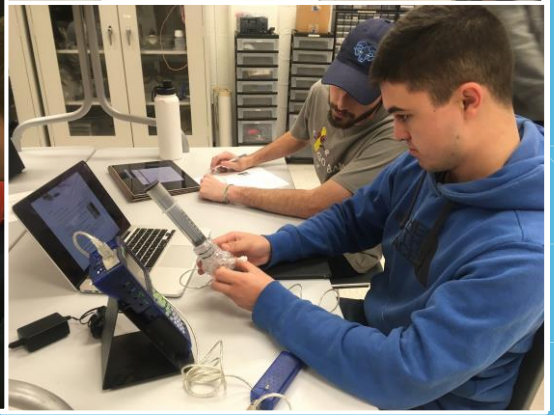
Fourth Year (28 credits)

Major Core
- Engineering Economics
- Introduction to Mechatronics
- System Dynamics and Control
- Design for Manufacturability
- Thermodynamics and Heat Transfer I
- Senior Design Project I
- Senior Design Project II

Hallmarks Core
- Capstone Folio Workshop
- Ethics

SAMPLE STUDENT WORK





CAREERS

Employers of Jefferson Engineering Alumni

EXAMPLES

- Boeing
- ILC Dover
- Target
- Tenneco
- Naval Surface Warfare Center
- Coca Cola
- Defense Logistics Agency
- Accenture
- US Army Natick Soldier Systems Center
- Lockheed Martin
- Ellison Technologies

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