BYU Mechanical Engineering
UNDERGRADUATE GUIDE

IRA A. FULTON COLLEGE
ENGINEERING AND TECHNOLOGY
Big Inspired Goal

Be recognized as the best undergraduate mechanical engineering program in the world and the alma mater for the world's most influential engineers.

Envisioned Future

The strength of our undergraduate program will be fueled by opportunities for learning and knowledge creation that flow out of a vibrant and vital graduate research program.

Graduates of our program (both undergraduate and graduate) will be highly sought after by top universities, corporations, and engineering enterprises and will lead many such organizations.

Our graduates will understand the influence of the Spirit and how it applies to their profession and the creative process.

Faculty, staff, students, and alumni will be recognized as individuals of faith and integrity.

Our faculty will be recognized nationally and internationally as experts in their fields.

The technology created within our department will have significant economic and societal impacts.

Our curriculum will be exemplary; our methods and materials will be widely respected and used by others.

We will have external partners that readily provide resources and other support necessary to fulfill our core purpose.
Introduction

The purpose of this new student guide is to provide you with information that will help you make decisions and get the most out of your BYU education. Underpinning this guide and at the foundation of our philosophy of education in the department is this principle: “You are responsible for your education.” Although we obviously have a large influence on the quality of your educational experience, you are ultimately responsible for how much you learn. We encourage and expect you to do more than “play the game” of getting grades. We want you to learn. If you wish to be a successful engineer you will need to learn for the rest of your life.

There are numerous opportunities to learn for which you will not receive a grade (although we would encourage you to document these activities in an optional portfolio). For example, we have a fine Projects Lab. A mechanical engineer should have experience in basic fabrication processes. We do not have time in the curriculum to teach you how to use the machines in the Projects Lab, so we provide opportunities to learn on your own. When things get busy, we open the Projects Lab on Saturdays. You should also consider getting involved in one of the student clubs or societies as an important enhancement to your classroom learning.

Everything in this guide is important. Please read it carefully and refer to it often. We will provide updates from time to time as necessary. We are glad you are interested in mechanical engineering. It is a great profession and we look forward to helping you obtain a world-class education.
Table of Contents

MECHANICAL ENGINEERING: AN OVERVIEW

• What is Mechanical Engineering?
• What do Mechanical Engineers do?
• Where do Mechanical Engineers work?
• What classes will I take?
• What are the educational objectives and program outcomes?

FREQUENTLY ASKED QUESTIONS

• How do I get into the major?
• What if my grades aren’t high enough?
• How many times can I apply?
• Do I have to take ME EN 191?
• What classes do I take each semester?
• What is Capstone?
• What classes can I take for my Technical Electives?
• Can I get an emphasis?
• Where can I go if I have questions or if I need help?

STUDENT OPPORTUNITIES

• Student Clubs and Societies
• Summer Internships
• Advantages of an Intern Experience
• How to obtain an Internship

ADVISOR INTERVIEW FORM
Mechanical Engineering: An Overview
What is Mechanical Engineering?

Engineering is the applied arm of science and therefore requires an understanding of traditional science and math, as well as an understanding of techniques and application in real world systems and devices. The mechanical engineer applies this understanding to synthesize new products that benefit humanity. In other words, engineers use math and science to come up with creative solutions to problems.

Mechanical engineering is built upon three main areas of study: thermal and fluid science, mechanical systems, and design and manufacturing.

Thermal and fluid science includes the study of thermodynamics, fluids, and heat transfer. Some examples of thermal applications are:

- Designing a rocket engine
- Predicting lift for an airplane wing
- Modeling wave action

Mechanical systems include the study of materials, dynamics, vibrations, and controls. Some examples of mechanical systems applications are:

- Building a robot
- Developing a control system for a satellite

Design and manufacturing includes computer-aided design, design, and manufacturing. Some examples of design and manufacturing applications are:

- Designing new hybrid vehicle drive trains
- Designing and testing prosthetics
What do Mechanical Engineers do?
There are many different career paths for individuals with a Mechanical Engineering degree.

- Transportation
- Manufacturing
- Communication
- Power Generation
- Computer-aided Engineering
- Agriculture
- Aerospace
- Materials
- Biomedical Engineering
- Research
- Design
- Analysis
- Testing
- Operations (not necessarily the medical kind)
- Technical Sales
- Management
- Business
- Law (with more schooling, of course)

A traditional engineering career can be characterized as having three phases: entry level engineer, established engineer and leading engineer. Not all engineers become CEOs of companies, but all engineers have the opportunity to be agents of change for society. Leading engineers benefit mankind through the application of their expertise or the management of others. Established engineers are the “backbone” of the engineering industry. They participate in product development and research programs that give them experience and allow them to mature into leading roles. The career of an entry level engineer usually begins under the direction of other engineers as he or she participates in product development and research programs. The undergraduate university experience prepares you for a successful engineering career. However, advancement from one level to another depends on your own work, study, and commitment.
Where do Mechanical Engineers work?

Of the 101 bachelor’s degree graduates in April 2017, 33 were starting jobs with an average salary of about $59,300. There were 20 student that were accepted to graduate schools.

What classes will I take?
As a mechanical engineering student, you will take courses in each of the main technical areas that characterize mechanical engineering (thermal and fluid science, mechanical systems, and design and manufacturing). These courses are shown on the Flow Chart, which is available further along in this guide as well as on the ME website. You will learn fundamental phenomena associated with each area and the physical laws or principles which govern those phenomena. You will learn how to use these laws to model and predict behavior, often using the computer as a tool. Other skills are also important. An engineer must know, for example, how to communicate effectively, how to work well with others, how to learn new things, and how to define and solve problems. Thus the technical areas are only part of your education (although a very important part) that must be complimented by other skills. These other skills will also be taught as you learn the technical material.
What are the Educational Objectives and Program Outcomes?

The Mechanical Engineering Department at Brigham Young University pursues the following educational objectives:

• Teach the fundamental concepts of math, science, and mechanical engineering to produce graduates who demonstrate technical excellence and provide service to their profession, community, family, and church.

• Instill a desire and ability to learn continuously, both through study and faith, to enable graduates to meet the changing demands of their profession and personal life.

• Provide practical and open-ended engineering experiences to develop graduates who think independently and demonstrate leadership and creativity.

• Engage students in activities to produce graduates who communicate and work effectively and ethically with people of diverse backgrounds.

The department fully supports the Aims of a BYU Education and is committed to the idea of integrating spiritual and secular learning.

To assure that the educational objectives are reached, the department has articulated twelve Program Outcomes for the Bachelors Degree. Each student graduating from this program is expected to have the following skills, abilities, and traits:

1. A basic understanding of fundamental physical phenomena and governing principles.

2. The ability to develop and solve mathematical models of fundamental physical phenomena and apply them to predict the behavior of engineering systems.

3. The ability to use engineering principles to design an innovative system, component, or process to meet desired needs.

4. The expertise to plan and conduct an experimental program and evaluate the results.
5. The ability to use modern engineering tools and techniques in engineering practice.

6. An understanding of manufacturing processes and planning.

7. Effective oral and written communication skills.

8. The ability to work with and lead others to accomplish common goals.

9. An appreciation of history, philosophy, literature, science, and the fine arts and how they influence the culture and behavior of societies.

10. Personal behavior demonstrating and practicing high moral and ethical standards.

11. The ability to practice engineering in a global environment.

12. A desire for and commitment to lifelong learning and service.

All courses in the curriculum are designed to help achieve these outcomes. For further information regarding individual course outcomes, please see the University's Undergraduate Catalog.
You are in control of your education. Take the wheel and steer!

The introduction to this guide discusses our desire for you to take responsibility for your education. How do you do this? The best way is for you to take responsibility for your learning. In each course you take, you should strive to learn what is being taught, whether or not you see the relevance. Be an active participant, seeking to take advantage of all learning opportunities, both in and out of the classroom. In addition, you must become familiar with the department program, procedures, and course requirements. Learning and knowing this information is your responsibility.

We suggest the following ideas:

**Freshman year:**
- Take the prerequisite courses and get good grades.
- Apply to the program (even if you are going on a mission—your spot will be held). Fill out the application and turn it in to the mechanical engineering department.
- Meet with the Undergraduate Advisor to plan your graduation path, ask questions, and learn about the mechanical engineering program outcomes (this is required as part of ME EN 191).

**Sophomore year:**
- Start a portfolio. Keep your best work from your ME classes. Include reflections on your learning activities.
• Find and meet your assigned faculty advisor (assignments occur after admittance).
• Start thinking about internships or doing research in a professor’s lab (meaning that you need to be proactive and learn what is available and what the professors do).
• Join a club or start volunteering in a lab (again, be proactive).

Junior year:
• Meet with your faculty advisor to plan your technical electives, discuss graduate school or career options, and show your portfolio.
• Continue taking courses that will keep you on track for your planned graduation.
• Add more items to your portfolio (engineering week work, design/lab projects or write-ups from junior courses).
• If you have had an internship or other professional experience, include this in your portfolio.
• Apply for Capstone (usually this will happen in late March or early April. Watch around the department for advertisements).

Senior year:
• Do a final graduation check with the Undergraduate Advisor.
• Apply for graduation (this is done online).
• Complete your Shop Clearance Form, Graduation Survey, and Exit Interview (these are NOT optional).
• Finish Capstone.
Frequently Asked Questions
How do I get into the major?

BYU’s Mechanical Engineering major is a limited Enrollment program, which means we only admit a certain number of students per year. In order to be admitted to our program, you must complete the required application courses, and then fill out and submit the application. We admit based on the GPA of the application courses. Typically, students with a 3.4 average or higher will get into the major. The application courses are:

1. ME EN 191
2. The first physics course taken at BYU from the sequence: PHYSICS 121, PHYSICS 123
3. The first math course taken at BYU from the sequence: MATH 112, 113, 302, 303, 313, 314, 334
4. The first mechanics course taken at BYU from the sequence: MeEn 101, CeEn 203, CeEn 204

For more information regarding the application process go to: http://me.byu.edu/content/applying-professional-program.

What if my grades aren’t high enough?

Remember, we are looking at the Application Courses for the GPA, so don’t panic if you get a C in American Heritage! If you are unhappy about the grades you get in the Application Courses, you may take each of those courses again one time, and we will use the highest grade for your application.

How many times can I apply?

You may apply as many times as you desire. However, once you have taken all the Application Courses twice, if you still do not make the GPA cutoff, you will not be able to get into the program.
Do I have to take ME EN 191?
Yes. You have to pass it before you can apply to the program.

What classes do I take each semester?
We have provided a flowchart to help you navigate your way through the program. You are not required to follow it exactly, but in order to graduate in a timely manner you should try to follow it as closely as possible, paying close attention to prerequisite requirements (see flowchart on adjacent page).

What is Capstone?
Capstone is our two-semester senior design project course (ME EN 475 and ME EN 476). All Mechanical Engineering students are required to take it. It is intended to be the culminating project of your undergraduate experience, and you will take it during your final year in the program. Please see the Capstone website (capstone.byu.edu) for more information.

capstone.byu.edu

What Technical Electives can I take?
The Technical Electives are meant to allow you freedom to pursue courses that will give you a “specialty” in your particular areas of interest. The department has provided a list of approved Technical Electives. If a course is not on the list, you may NOT count it as a Technical Elective. You can find the current list of approved Technical Electives on p. 15.
## MECHANICAL ENGINEERING DEPARTMENT - BS Degree Program

**SUGGESTED GRADUATION PLAN - 2017-2018**

*Note: The Progress Report for each student lists their official requirements*

### Major Requirements
- **Semester 1**
  - Math 112: Calculus 1 (4 credits)
  - Math 110, 111: Math 112 p or c, *QR & LL (3 credits)
  - MeEn 191: New Student Seminar (0.5 credits)
  - Bio 100: Princ of Biology (3 credits)
  - Total: 15.5 credits

- **Semester 2**
  - Math 113: Calculus 2 (4 credits)
  - Phscs 121: Newtonian Mech (3 credits)
  - MeEn 101: Intro to ME/Statics (3 credits)
  - CEEn 203: Mech of Materials (3 credits)
  - Total: 16.0 credits

- **Semester 3**
  - Math 302: Engr Math 1 (4 credits)
  - Phscs 123: Waves, Optics, Thermo (3 credits)
  - MeEn 101 or CEEn 103 (3 credits)
  - CEEEn 204: Dynamics (3 credits)
  - EngT 231: Global Ldrshp (3 credits)
  - Total: 18.0 credits

- **Semester 4**
  - Math 303: Engr Math 2 (4 credits)
  - ECEn 301: Elem Elec Eng (3 credits)
  - MeEn 273: Computing (3 credits)
  - ME En 250, Chem 105 (3 credits)
  - MeEn 272: CAD (3 credits)
  - Total: 16.0 credits

- **Semester 5**
  - Stat 201: Statistics (3 credits)
  - MeEn 321: Thermodynamics (3 credits)
  - MeEn 302: Measurement (2 credits)
  - MeEn 330: Mechatronics (3 credits)
  - MeEn 382: Mfg Process (3 credits)
  - Total: 17.0 credits

- **Semester 6**
  - Math 313: Linear Algebra (3 credits)
  - MeEn 330: Mechatronics (3 credits)
  - MeEn 335: Stat 201; Engl 316 p or c (3 credits)
  - MeEn 335: Dyn Systems (3 credits)
  - MeEn 393: Professional Skills Eng T 231 (1 credit)
  - Total: 17.0 credits

- **Semester 7**
  - Math 314: Calc of Sev Variables (3 credits)
  - MeEn 335, Stat 201; Engl 316 p or c (3 credits)
  - ME En 250, MeEn 272 (3 credits)
  - MeEn 393: Professional Skills Eng T 231 (1 credit)
  - Total: 17.0 credits

- **Semester 8**
  - Math 334: Differential Equations (3 credits)
  - MeEn 335, Stat 201; Engl 316 p or c (3 credits)
  - MeEn 393: Professional Skills Eng T 231 (1 credit)
  - Total: 14.0 credits

### University Core
- **Semester 1**
  - Writing Requirement (3 credits)
- **Semester 2**
  - Religion (2 credits)
  - Cornerstone Requirement (2 credits)
- **Semester 3**
  - Religion (2 credits)
  - Cornerstone Requirement (2 credits)
  - Total: 16.0 credits

### Credits
- Total: 130.5 credits

### Applying to the Program
1. Complete designated courses above or alternate courses listed on me.byu.edu
2. Following completion of courses, submit application at me.byu.edu

### Alternate Math Courses
- Math 313 - Linear Algebra
- Math 314 - Calc of Sev Variables
- Math 334 - Differential Equations

### Envelope Classes
- These courses have to be registered together.

### Technical Elective Courses
- 4 courses (12 hrs) required
- At least 2 ME courses
- No duplicates of required courses
- 3 Credit-hr max in project classes
- List of approved TE's at me.byu.edu

### Course Key
- Course # | hrs
- Course Title
- Prerequisites
  - p: prerequisite
  - c: concurrent
  - *GE's fulfilled

### ME Professional Program (Acceptance Required)
- Must be taken consecutive Fall/Winter semesters
- No more than apx. 30 hours left in the Major
- 475 pre-reqs: MeEn 393, MeEn 330/335, MeEn 372; MeEn 312/362 p or c; MeEn 393 p or c
- 476 pre-reqs: MeEn 312/362, MeEn 393, MeEn 475; MeEn 340 p or c.

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**MECHANICAL ENGINEERING DEPARTMENT - BS Degree Program**

**SUGGESTED GRADUATION PLAN - 2017-2018**

*Note: The Progress Report for each student lists their official requirements*
Technical Elective Requirements
2017-2018

a. At least twelve hours (4 courses) (Fall 2015 and later)
b. At least 6 hours (2 courses) in Mechanical Engineering
c. No courses below 300 level
d. Maximum of 3 hours of independent project credit (Me En 497R or equivalent)
e. Courses at the 500 level are available for advanced students
f. All courses must be selected from the following:

- Mechanical Engineering: Any class **400 or higher**
- Civil and Environmental Engineering: Any class 300 or higher
- Chemical Engineering: Any class 300 or higher
- Chemistry: Any class 300 or higher
- Computer Science: Any class 300 or higher
- Electrical and Computer Engineering: Any class 300 or higher
- Math: Any class **400 or higher**
- Physics: Any class 300 or higher
- Statistics: Any class 300 or higher

BusM 430 Introduction to International Business (also Independent Study)
CFM 412 Construction Scheduling and Cost Control
ENG T 497R Global Engineering Outreach
Geol 440 Solid Earth Geophysics
IT 444 Instrumentation and Computers (not currently offered)
IT 548 Mechatronics
Mfg 331 Metals Processes
Mfg 340 Quality Systems in Manufacturing
Mfg 355 Plastics Materials and Processing
Mfg 431 Tool Design
Mfg 434 Introduction to Manufacturing Automation
Mfg 480 Process Planning and Systems
Mfg 531 Advanced CAM Programming
Mfg 532 Manufacturing Systems
Mfg 533 Manufacturing Information Systems
Mfg 555 Composite Materials and Processes
Mfg 574 Advanced Tool Design
Mfg 575 Packaging Technologies
Mfg 580 Manufacturing Simulation
Mfg 672 (not currently offered)
PDBio 305 Essentials of Human Physiology
Russ 490R Fundamentals of Science and Engineering in Russian
Can I get an emphasis?
We offer a manufacturing emphasis. If you are interested in pursuing this emphasis, you may consult the University’s Undergraduate Catalog to see which courses you should take. If you are interested in pursuing a different area of focus, choose your Technical Electives to steer you in that direction.

For example, if you are interested in Aerospace, you could take ME EN 523 (Design of Aircraft Structures), ME EN 426 (Gas Turbine and Jet Engine Design) and ME EN 415 (Applied Aerodynamics and Flight Mechanics). The other technical electives that you choose are up to you, but these classes would give you a foundation for the material pertaining to Aerospace.

Where can I go if I have questions or if I need help?
Parents, siblings, and roommates are excellent sources of advice and wisdom, but if you have questions about the department or the program, please come to us.

• We have a caring and knowledgeable Undergraduate Advisor who is always willing to help. You can make an appointment by calling the main Mechanical Engineering office at 801-422-2625.
• We have an excellent Advisement Center in the College. You can make an appointment there by calling 801-422-4325, or by stopping in 242 CB.
• We have a well-maintained website. Please visit us there at me.byu.edu.
• Don’t hesitate to make an appointment with your faculty advisor, or a professor from one of your classes, or a faculty member you have identified as one with whom you might like to work. We have a fantastic faculty who care very much about your success. You can get contact information for any of our faculty or staff from our website.
<table>
<thead>
<tr>
<th>Technical Area of Emphasis</th>
<th>Technical Elective Courses</th>
</tr>
</thead>
</table>
| Acoustics                 | MeEn 535 Mechanical Vibrations  
                              | MeEn 561 Fundamentals of Acoustics  
                              | MeEn 562 Analysis of Acoustic Systems  |
| Aerospace                 | MeEn 415 Flight Vehicle Design  
                              | MeEn 515 Aerodynamics  
                              | MeEn 425 Internal Combustion Engines  
                              | MeEn 426 Gas Turbine and Jet Engine Design  
                              | MeEn 523 Aircraft Structures  |
| Automotive                | MeEn 425 Internal Combustion Engines  
                              | MeEn 477 Design for Manufacture and Assembly  
                              | MeEn 501 Stress Analysis and Design of Mechanic Structures  |
| Biomechanics              | MeEn 552 Introduction to Neuromechanics  
                              | MeEn 555 Introduction to Biomechanics  
                              | ChEn 518 Biomedical Engineering Principles  
                              | PDBio 305 Human Physiology and Lab  
                              | Chem 351 Organic Chemistry  
                              | Chem 481 Biochemistry  |
| Computer-Aided Engineering | MeEn 471 CAE Applications  
                              | MeEn 570 CAE Software Engineering  
                              | MeEn 578 CAD/CAM Applications  |
| Design/Manufacturing      | MeEn 477 Design for Manufacture and Assembly  
                              | MeEn 482 Manufacturing Systems Analysis and Design  
                              | MeEn 486 Automation  
                              | MeEn 550 Microelectromechanical Systems (MEMS)  
                              | MeEn 575 Optimization Techniques in Engineering  
                              | MeEn 576 Product Design  
                              | MeEn 578 CAD/CAM Applications  
                              | MeEn 579 Global Product Development  
                              | MeEn 584 Manufacturing Process Machine Design  
                              | MeEn 585 Manufacturing Competitiveness: Quality and Productivity  |
| Dynamics and Vibration    | MeEn 415 Applied Aerodynamics and Flight Mechanics  
                              | MeEn 437 Kinematics  
                              | MeEn 508 Structural Vibrations  
                              | MeEn 534 Dynamics of Mechanical Systems  
                              | MeEn 535 Mechanical Vibrations  
<pre><code>                          | MeEn 537 Advanced Mechanisms: Robotics  |
</code></pre>
<table>
<thead>
<tr>
<th>Category</th>
<th>Courses</th>
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<tbody>
<tr>
<td>Fluid Mechanics</td>
<td>MeEn 412 Applications to Fluid Dynamics</td>
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<td></td>
<td>MeEn 510 Compressible Fluid Flow</td>
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<td></td>
<td>MeEn 512 Intermediate Fluid Dynamics</td>
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<tr>
<td>Heat Transfer</td>
<td>MeEn 540 Intermediate Heat Transfer</td>
</tr>
<tr>
<td></td>
<td>MeEn 541 Computational Fluid Dynamics and Heat Transfer</td>
</tr>
<tr>
<td>Instrumentation and Controls</td>
<td>MeEn 431 Design of Control Systems</td>
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<td></td>
<td>MeEn 564 Digital Instrumentation and Mechatronic Systems</td>
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<td></td>
<td>MeEn 570 Computer-Aided Engineering Software Development</td>
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<tr>
<td>Materials</td>
<td>MeEn 500 Design and Materials Applications</td>
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<td></td>
<td>MeEn 452 Intermediate Materials</td>
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<td></td>
<td>MeEn 456 Composite Materials Design</td>
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<td></td>
<td>MeEn 558 Metallurgy</td>
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<tr>
<td>Mechanisms, Robotics</td>
<td>MeEn 437 Kinematics</td>
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<tr>
<td></td>
<td>MeEn 472 Mechanical Systems Design Applications</td>
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<tr>
<td></td>
<td>MeEn 537 Advanced Mechanisms, Robotics</td>
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<td>MeEn 538 Compliant Mechanisms</td>
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<td>MeEn 570 CAE Software Engineering</td>
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<tr>
<td>Stress Analysis &amp; Structures</td>
<td>MeEn 501 Stress Analysis and Design of Mechanical Structures</td>
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<td>MeEn 503 Plasticity and Fracture</td>
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<td></td>
<td>MeEn 504 Computer Structural Analysis and Optimization</td>
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<td></td>
<td>MeEn 506 Continuum Mechanics and Finite Element Analysis</td>
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<td></td>
<td>MeEn 523 Aircraft Structures</td>
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<tr>
<td>Thermodynamics</td>
<td>MeEn 422 Applied Thermodynamics</td>
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<td>MeEn 425 Internal Combustion Engines</td>
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<td>MeEn 426 Gas Turbine and Jet Engine Design</td>
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<td>MeEn 521 Intermediate Thermodynamics</td>
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<td>MeEn 522 Combustion</td>
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Student Opportunities
Student Clubs and Societies

BYU, the College, and the Department provide many interesting and exciting programs. These programs provide valuable opportunities for learning and growth, and will help you learn leadership skills, gain technical experience, and distinguish yourself as an emerging professional.

Department Sponsored Student Chapters of Professional Societies

1. American Society of Mechanical Engineers (ASME)—promotes the art, science and practice of multidisciplinary engineering and allied sciences around the globe.
2. American Institute of Aeronautics and Astronautics (AIAA)—the heart of aerospace. With more than 31,000 members, AIAA is the world’s largest professional society devoted to the progress of engineering and science in aviation, space, and defense.
3. Society of Automotive Engineers (SAE)—a global association of more than 128,000 engineers and related technical experts in the aerospace, automotive and commercial-vehicle industries. SAE International’s core competencies are life-long learning and voluntary consensus standards development.
4. Society for the Advancement of Materials and Process Engineering (SAMPE)—an international professional member society that provides information on new materials and processing technologies through chapter technical presentations, two journal publications, symposia and commercial expositions in which professionals can exchange ideas and air their views. As the only technical society encompassing all fields of endeavor in materials and processes, SAMPE provides a unique and valuable forum for scientists, engineers, designers and academicians.
Fulton College of Engineering and Technology Sponsored Societies

1. Tau Beta Pi (Engineering Honor Society)—founded in 1885 to mark in a fitting manner those who have conferred honor upon their alma mater by distinguished scholarship and exemplary character as undergraduates in the field of engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in the engineering colleges.

2. Society of Women Engineers (SWE)—a national educational and service organization founded in 1950. SWE is the driving force that establishes engineering as a highly desirable career aspiration for women. SWE empowers women to succeed and advance in those aspirations and be recognized for their life-changing contributions and achievements as engineers and leaders.

3. Global Engineering Outreach (GEO)—this group works to solve global needs by creating community-driven development through the design and implementation of sustainable engineering projects. They work to train and involve internationally responsible engineering students.

If you are interested in getting involved in any these groups, you can find more information on the ME website. BYU also maintains an excellent website for campus clubs at clubs.byu.edu/home.
Summer Internships

Another important opportunity is an internship. The Mechanical Engineering Department does not require students to obtain an internship, but we strongly encourage it. You do not have to wait until you are a junior or senior—sophomores and even freshmen can get an internship.

An internship is a career-appropriate job that you take before you have finished your education. Internships are different than “co-ops.” A “co-op” is a job opportunity at an outside company that is sponsored by the University and for which you get course credit. Because of liability issues, few co-ops are available.

Advantages of an Intern Experience

Few engineering students have a clear picture of what an engineer actually does. As an intern, you get to work alongside engineers on real-world problems and gain valuable experience. Not all jobs are equally challenging, but most companies try to find an interesting project that will benefit both the intern and the company.

Companies realize that summer internships are great recruiting tools. You get a good look at the company and they get a good look at you. If you have a good experience, you are more likely to accept an offer for permanent employment after you graduate. If they like you, they are more apt to give you a good offer than someone they don’t know.

How to Obtain an Internship

1. Visit the College Advisement Center (242 CB). They have information and job listings, as well as a dedicated Career Counselor.
2. The University Career Services Center (2400 WSC) has job listings. They also have many resources to help you research companies to contact.
3. Use BYU Bridge. This is an online resource that connects BYU students to employers and allows users to search job listings, apply for jobs, communicate with recruiters, and schedule on-campus interviews. Log in to bridge.byu.edu.

4. The Mechanical Engineering Department External Relations Coordinator (435 CTB) can help you identify opportunities and can also review your resume.

5. Attend the BYU STEM Career Fair. Each Fall and Winter semester, leading companies come to our campus to advertise and recruit. This is an opportunity for you to talk to a representative in person, and many will accept resumes for internships. Come prepared.

6. Talk to people, network with friends and relatives, and find out what jobs are available. Send out resumes. Make appointments for interviews. The more effort you make, the more likely you are to get an internship.

Take practical and consistent measures to obtain an internship. We have resources to assist you in finding and preparing for opportunities, but ultimately the effort and initiative required to succeed depends on you.
Advisement Overview Questionnaire

(Bring this completed form to the Advisement Overview)

Name__________________________Student ID___________________Email__________________

The purpose of the Overview is to provide an opportunity for students to visit the Department of Mechanical Engineering Suite, meet the academic advisor, become familiar with the Suggested Graduation Plan, learn how to plan courses and register in MyMap, and how to prepare for admission into the ME Professional Program. Please read over the Undergraduate Guide before the Overview and answer the following questions. The Academic Advisor will sign it at the Overview, following which the student must upload it to Learning Suite for credit.

1. Why have you chosen to investigate Mechanical Engineering?

2. What classes in Mechanical Engineering sound most interesting to you? (Browse classes on Flowchart, p. 14)

3. What activities are you interested in, to help prepare you to be a mechanical engineer? (See p. 22-25)

4. Look over the Educational Objectives and Program Outcomes for Mechanical Engineering and list what outcomes best match your goals and interests. (See p. 6)

5. Summarize the process for applying to the ME Professional Program. (See p. 12)

6. What do you see as your role in accomplishing the Big Inspired Goal and Envisioned Future for the Department of Mechanical Engineering? (See inside cover)

7. What concerns do you have about coursework and other preparation for the degree?

Advisor Signature____________________________________Date__________________________