Mechanical Engineering
B.S.M.E.

Degree Requirements: 132 Credit Hours

See Core Curriculum for required courses in Area A1 through Area E.

### General Requirements

**Degree Requirements: 132 Credit Hours**

**Area A1 - Communication Skills**
Select 6 credit hours from Area A1 of the Core Curriculum 6

**Area A2 - Quantitative Skills**
- MATH 1441 Calculus I 1 3

**Area B - Global Engagement**
Select 4 credit hours from Area B of the Core Curriculum 4

**Area C - Humanities, Fine Arts, and Ethics**
Select 6 credit hours from Area C of the Core Curriculum 6

**Area D - Natural Sciences, Mathematics, and Technology**
- PHYS 2211 Principles of Physics I 2 4
- PHYS 2242 Calculus II 2 3

**Area E - Social Sciences**
Select 12 credit hours from Area E of the Core Curriculum 12

**Area F - Courses Appropriate to Major**
- CHEM 1147 Comprehensive General Chemistry 4
- ENGR 1133 Engineering Graphics 3 3
- ENGR 1731 Computing for Engineers 3
- MATH 2242 Calculus III 4
- PHYS 2212 Principles of Physics II 4

**Health and Physical Education Activities**
- HLTH 1520 Healthful Living 2

**Orientation**
- FYE 1220 First-Year Seminar 2

**Specific Requirements**
- Carryover from Area A2 1
- Carryover from Area D 1
- ENGR 2131 Electronics and Circuit Analysis 3
- ENGR 3431 Thermodynamics 3
- ENGR 2231 Engineering Mechanics I 3
- ENGR 2232 Dynamics of Rigid Bodies 3
- ENGR 3233 Mechanics of Materials 3
- ENGR 3235 Fluid Mechanics 3
- MATH 3230 Ordinary Differential Equations 3

**Major Requirements**
- ENGR 2112 Solid Modeling and Analysis 1
- MENG 1310 Manufacturing Processes Lab 1
- MENG 2110 Mechanical Engineering Case Studies in Design & Analysis 1
- MENG 2139 Numerical Methods in Engineering 3
- MENG 3130 Mechanism Design 3
- MENG 3135 Machine Design 3
- MENG 3233 Heat Transfer 3
- MENG 3331 Materials Science Studio 3
- MENG 3333 Materials Processing Studio 3
- MENG 3521 Mechatronics Studio Laboratory 2

**ME Technical Electives**
- MENG 4210 Energy Science Laboratory 1
- MENG 4430 Engineering Quality Control and Project Management 3
- MENG 4612 Mechanical Engineering Senior Seminar 1
- MENG 5135 Introduction to Finite Element Analysis 3
- MENG 5137 Mechanical System Design 3
- MENG 4811 Mechanical Engineering Research 1
- MENG 4822 Research Project in Mechanical Engineering 3
- MENG 5135 Vibration and Preventive Maintenance 1
- MENG 5138 Composite Materials: Manufacturing, Analysis, and Design 3
- MENG 5233 Wind Energy 1
- MENG 5234 Heating, Ventilating, and Air Conditioning 1
- MENG 5237 Applied Combustion 1
- MENG 5238 Engine Development and Performance 1
- MENG 5239 Biofuels Testing 1
- MENG 5231 Automation and Computer Integrated Manufacturing Systems 1
- MENG 5233 Robot Dynamics, Design and Analysis 1
- MENG 5431 Compressible Flow 1
- MENG 5432 Applied Computational Fluid Dynamics 1
- MENG 5536 Mechanical Controls 1
- MENG 5691 Special Problems in Mechanical Engineering 1
- TMAE 5139 Renewable Energy 1 or equivalent with program coordinator’s approval

**Free Elective**
Select 3 credit hours of Free Electives 3

Total Credit Hours 132

1. While Calculus I (MATH 1441) is 4 credit hours, only 3 credit hours will count toward fulfilling Area A2. The remaining credit hour will be applied toward Specific Requirements.
2. The listed courses are recommended in Area D
3. College credits can be given for high school pre-engineering program Project Lead The Way’s (PLTW’s) Introduction to Engineering Design (IED) course as a possible substitution for Engineering Graphics (ENGR 1133), if the following three conditions are satisfied:
   1. student scores 80% or above overall in the course and
   2. an approval of the PLTW affiliate director faculty member at Georgia Southern.

**Other Program Requirements**

- At least 30 credit hours of approved Engineering courses must be taken at Georgia Southern.
- The listed courses are recommended in Area D
- Proficiency examinations will not be accepted in the substitution for any upper-division or laboratory-based courses.

**Honors In Mechanical Engineering**

To graduate with Honors in Mechanical Engineering a student must:

- Be admitted to the University Honors Program
- Complete all University Honors Program Requirements
• Complete Mechanical Engineering Departmental Honors
  Requirements (or appropriate substitutions approved by the
  department chair)

<table>
<thead>
<tr>
<th>Credit Hours</th>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ENGR 1133H</td>
<td>Engineering Graphics</td>
<td>0.3</td>
</tr>
<tr>
<td>ENGR 1731H</td>
<td>Computing for Engineers</td>
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<tr>
<td>ENGR 2112H</td>
<td>Solid Modeling and Analysis</td>
<td>1</td>
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<tr>
<td>ENGR 2231H</td>
<td>Engineering Mechanics I</td>
<td>3</td>
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<tr>
<td>ENGR 3233H</td>
<td>Mechanics of Materials</td>
<td>3</td>
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<tr>
<td>MENG 3521H</td>
<td>Mechatronics Studio Laboratory</td>
<td>2</td>
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<td>MENG 4210H</td>
<td>Energy Science Lab (Honors)</td>
<td>1</td>
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<tr>
<td>MENG 4811H</td>
<td>Mechanical Engineering Research</td>
<td>1</td>
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<td>MENG 4822H</td>
<td>Research Project in Mechanical</td>
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<td></td>
<td>Engineering</td>
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</table>

*For students entering the University Honors Program as a freshmen and seeking to complete the Departmental Honors in Mechanical Engineering, it is highly recommended that these freshmen complete MATH 1441H.

• Complete a capstone thesis
• Maintain a 3.3 overall grade point average, including a minimum 3.3 GPA in all major courses applied toward graduation.

Advisement

CEIT Office of Student Services, Room 1208, Allen E. Paulson College of Engineering and Information Technology, Telephone: (912) 478-4877.