School of Science and Engineering

500 Lindy Boggs Center
Phone: (504) 865-5897
Fax: (504) 865-5866
Email: bmen-info@tulane.edu
Web: tulane.edu/sse/bme/
GENERAL REQUIREMENTS FOR STUDENTS MATRICULATING IN ACADEMIC YEAR: 2017-2018

DEGREE: BACHELOR OF SCIENCE, ENGINEERING

MAJOR: BIOMEDICAL ENGINEERING

MINIMUM CUMULATIVE GRADE POINT AVERAGE: 2.0

MINIMUM MAJOR GRADE POINT AVERAGE: 2.0

TOTAL CREDITS: 129

### CORE CURRICULUM REQUIREMENTS

<table>
<thead>
<tr>
<th>Area</th>
<th>Credits</th>
<th>To Be Selected From</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Writing</td>
<td>4</td>
<td>ENGL 1010 or Equivalent</td>
</tr>
<tr>
<td>TIDES – 1 course in fall semester</td>
<td>1-1.5</td>
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<tr>
<td>Cultural Knowledge – 1 Humanities</td>
<td>6</td>
<td>Courses designated Humanities and Fine Arts</td>
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<tr>
<td>1 Fine Arts</td>
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<td></td>
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<tr>
<td>Cultural Knowledge – Social Science</td>
<td>6</td>
<td>Courses designated Social Science</td>
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<tr>
<td>Cultural Knowledge – Humanities/ Fine Arts</td>
<td>6</td>
<td>Courses designated Humanities, Fine Arts, or Social Science</td>
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<tr>
<td>or Social Science</td>
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</tr>
<tr>
<td>Quantitative Reasoning</td>
<td>8</td>
<td>MATH 1210 and 1220 or equivalent</td>
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<tr>
<td>2 Math courses</td>
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<td></td>
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<tr>
<td>Scientific Inquiry – 1 Lab Science</td>
<td>4-8</td>
<td>CHEM 1070/1075</td>
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<tr>
<td>1 Science or Math</td>
<td></td>
<td>PHYS 1310</td>
</tr>
<tr>
<td>Writing Intensive</td>
<td>4</td>
<td>BMEN 4900-4910</td>
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<tr>
<td>Public Service – 1 Tier</td>
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<td>1000-3000-Level</td>
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<tr>
<td>2nd Tier</td>
<td></td>
<td>3000-Level or above</td>
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<tr>
<td>Western Traditions</td>
<td>3</td>
<td>Refer to Undergraduate Core Curriculum Guide</td>
</tr>
<tr>
<td>Or Comparative Cultures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intl. Perspectives</td>
<td>3</td>
<td>Refer to Undergraduate Core Curriculum Guide</td>
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</tbody>
</table>

### MAJOR REQUIREMENTS

**Biomedical Engineering Required Courses:**
- BMEN 2020
- BMEN 2310
- BMEN 2600
- BMEN 2730
- BMEN 3030/3035
- BMEN 3070/3075
- BMEN 3440
- BMEN 3820
- BMEN 4900*
- BMEN 4030
- BMEN 4040
- BMEN 6720
- BMEN 4910*
- BMEN 6710

**Biomedical Engineering Electives** – Two courses from [BMEN 3780, BMEN 3400, BMEN 3300, BMEN 3420, BMEN 3912] plus BMEN6xx elective.

All electives should be chosen in consultation with faculty advisor.

**Professional Electives** – Three courses – appropriate to the student’s goals.

**Mathematics Required Courses**
- MATH 1210*
- MATH 1220*
- MATH 2210
- MATH 2240

**Chemistry Required Courses**
- CHEM 1070*, 1075*
- CHEM 1080, 1085

**Physics Required Courses**
- PHYS 1310*
- PHYS 1320

**Cell & Molecular Biology Required Course**
- CELL 1010/2115

**Engineering Physics Required Courses**
- ENGP 1410, ENGP 2010/2011, ENGP 2430, and ENGP 3120

*Included in Core Curriculum

This information is for students pursuing a minor in BIOMEDICAL ENGINEERING – REQUIREMENTS:
- Prerequisites: MATH 1210, 1220, 2210, 2240, CELL 1010, PHYS 1310 and 1320
- Engineering Courses: ENGP 1410, BMEN 2310 and BMEN 3xxx “Domain” Class

Any three courses from the following list:
- ENGP 2010, 2430, 3120
- BMEN 2020, 2730, 3440

Note: This minor is for non-engineering majors only

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- The Degree Plan and other information provided in this booklet serve only as advising tools. Newcomb-Tulane College advisors will help advise you on the core-curriculum, decide on a major, and consult on any academic success issues.
- Your major advisors will advise you on major requirements.
- Students with multiple majors will have more than one advisor and will need to consult with the appropriate advisor.
- Be in the know about your major! By declaring early, you have access to a major advisor, are able to enroll in “major-only” classes, and are on listservs that enable you to receive information about events, internships, and opportunities.
- Pre-med and Pre-law students should also consult with the health professions advisors or the pre-law advisors.
**Biomedical Engineering**

**GENERAL INFORMATION**
- Gaining relevant work experience through internships, practica, part-time jobs, or volunteer positions is critical.
- To maximize your employability, develop practical skills such as computer expertise, written and verbal communication, project management, etc.
- With so many areas of specialization within the field, it may be beneficial to attend graduate or professional school.
- Due to our aging population, the US Bureau of Labor Statistics expects employment of biomedical engineers to grow significantly over the next five years.

**SKILLS**
- High proficiency in written/oral communications
- Ability to identify works of art from various cultures and time periods
- Ability to think and write critically
- Ability to do library research
- Ability to present research orally
- Ability to make critical observations/decisions
- Ability to understand and sympathize with different cultures
- Complex problem solving skills
- Ability to use scientific rules and methods to solve problems
- Ability to determine how a system should work and how changes in condition will affect outcomes
- Deductive and inductive reasoning skills

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<table>
<thead>
<tr>
<th>CAREER AREAS</th>
<th>EMPLOYERS</th>
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<tbody>
<tr>
<td><strong>HEALTHCARE FACILITIES</strong></td>
<td>Hospitals</td>
</tr>
<tr>
<td>• Applications engineering</td>
<td>• Clinics</td>
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<tr>
<td>• Equipment selection</td>
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<tr>
<td>• Technical writing</td>
<td></td>
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<tr>
<td>• Clinical patient evaluation</td>
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</tbody>
</table>

| **PRIVATE INDUSTRY**         | • Pharmaceutical companies |
| • Design engineering         | • Medical device manufacturers |
| • Product engineering        | • Medical testing firms    |
| • Sales engineering          | • Biotechnology firms     |
| • Technical documentation    | • Research laboratories   |
|                              | • Engineering firms       |
|                              | • Consulting firms        |

| **GOVERNMENT AGENCIES**      | • Research facilities     |
| • Research                  | • Regulatory agencies     |

| **EDUCATION**               | • Universities            |
| • Teaching                  | • Medical schools         |
| • Administration            |                            |
Tulane University is committed to your academic success and provide several services to assist.

**PROFESSIONAL ORGANIZATIONS**

- Biomedical Engineering Central
  www.bmecentral.com
- Biomedical Engineering Network
  www.bmenet.org
- Biomedical Engineering Society
  www.bmes.org
- National Society of Professional Engineers
  www.nspe.org

**RELATED WEBSITES & ASSOCIATIONS**

- EngineerJobs
  www.engineerjobs.com
- Biomedical Engineering Jobs
  www.physicstoday.com
- New Scientist Jobs
  http://jobs.newscientist.com
- Biomedical Engineering Jobs
  www.biomedicalengineer.com
- Science Careers
  http://sciencecareers.sciencemag.org

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For Jobs, internships, resume assistance, interviews, and self-assessments, please go to:

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Success Tulane.edu

[advising. TULANE.edu](#)