School of Science and Engineering

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Fax: (504) 862-8702
Email: sse@tulane.edu
Web: tulane.edu/sse/pep/
**GENERAL REQUIREMENTS FOR STUDENTS MATRICULATING IN ACADEMIC YEAR: 2017-2018**

**DEGREE:**  
**TOTAL CREDITS: 120**

**MAJOR:**  
**ENGINEERING PHYSICS**

**MINIMUM CUMULATIVE GRADE POINT AVERAGE: 2.0**  
**MINIMUM MAJOR GRADE POINT AVERAGE: 2.0**

### CORE CURRICULUM REQUIREMENTS

<table>
<thead>
<tr>
<th>Area</th>
<th>Credits</th>
<th>To Be Selected From</th>
<th>Core Curriculum Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Writing</td>
<td>4</td>
<td>ENGL 1010 or Equivalent</td>
<td></td>
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<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>Historical Arts</td>
<td>6</td>
<td>Courses designated Social Science</td>
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<tr>
<td>Cultural Knowledge – 1 Humanities/ Fine Arts or Social Science</td>
<td>6</td>
<td>Courses designated Humanities, Fine Arts, or Social Science</td>
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<tr>
<td>Quantitative Reasoning</td>
<td>8</td>
<td>MATH 1210 and 1220 or equivalent</td>
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<tr>
<td>Scientific Inquiry – 1 Lab Science</td>
<td>7-8</td>
<td>Courses from departments designated Science and Math</td>
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<tr>
<td>1 Science or Math</td>
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<tr>
<td>Writing Intensive</td>
<td>1</td>
<td>ENGP 4880 or another Writing Intensive</td>
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<tr>
<td>Public Service – 1st Tier</td>
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<tr>
<td>2nd Tier</td>
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<tr>
<td>Western Traditions</td>
<td>3</td>
<td>Refer to Undergraduate Core Curriculum Guide</td>
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<tr>
<td>Outside Western Traditions Or Comparative Cultures Intl. Perspectives</td>
<td>3</td>
<td>Refer to Undergraduate Core Curriculum Guide</td>
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</tbody>
</table>

### MAJOR REQUIREMENTS

<table>
<thead>
<tr>
<th>Area</th>
<th>Credits</th>
<th>Core Curriculum Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math: MATH 1210, MATH 2210, MATH 2240</td>
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<tr>
<td>Basic Science: PHYS 1310, PHYS 1320, PHYS 2350, PHYS 2360</td>
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<tr>
<td>CHEM 1070, 1075, CHEM 1080, 1085</td>
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<tr>
<td>Product and Experimental Design and Computing Concepts and Applications:</td>
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<tr>
<td>ENGP 2310 &amp; ENGP 2020</td>
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<td>Materials Science and Engineering:</td>
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<td>ENGP 3120</td>
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<td>Advanced Laboratory: ENGP 3530</td>
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<tr>
<td>Cultural Knowledge – Humanities</td>
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<td>Social Science</td>
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<tr>
<td>Nanoscience and Technology: ENGP 3600</td>
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<tr>
<td>Computation: ENGP 3170 or PHYS 6170 or CENG 3230 (students may instead take MATH 3310) + one additional 3-credit engineering elective</td>
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<tr>
<td>Scientific Inquiry – 1 Lab Science</td>
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<tr>
<td>Contemporary Physics Elective: One course chosen from among – PHYS 3630, PHYS 3740, PHYS 4230 or PHYS 4650</td>
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<td>Engineering Electives: Consult Faculty Advisor</td>
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<td>Writing Intensive</td>
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<td>Broader Technical Elective: Consult Faculty Advisor</td>
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<tr>
<td>Professional Development: Consult Faculty Advisor</td>
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<td>Summer Internship: Consult Faculty Advisor</td>
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<tr>
<td>Team Design Project and Professional Practice I and II: Consult Faculty Advisor</td>
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**This information is for students pursuing a minor in ENGINEERING SCIENCE – REQUIREMENTS:**

**I. Pre-requisite Math and Science Courses:**
- MATH 1210, MATH 2210, MATH 2240 or MATH 4240
- PHYS 1310, PHYS 1320

**II. Engineering Courses:**
- Two courses from: ENGP 1410, ENGP 2010, CENG 2110, CENG 2120, ENGP 2430, CENG 2500, ENGP 3120
- BMEN/ENGP 2310 or BMEN/ENGP 2020
- Two 3000-4000 level electives in biomedical or chemical engineering or engineering physics

**III. Engineering Science Minor with an SSE Major**

Twenty-four credits in the major may not overlap with the minor. Student must earn at least a 2.0 in minor courses. No courses counting toward a first minor will count toward the second minor.

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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.
- Minors are not assigned an advisor, but a faculty member in the department is designated to advise minors.
- Become familiar with your major! By declaring early, you have access to a major advisor, are able to enroll in “majors only” classes, and are included in list serves that allow you to receive information about events, internships, and other opportunities.
- Premed and Pre-law students should also consult with one of the Pre-Professional advisors.
What Can I Do with a Major in... Engineering Physics

**GENERAL INFORMATION**
- Gaining relevant technical work experience through internships, part-time jobs, or volunteer positions is critical.
- Develop strong computer, mathematics and communication skills.
- Join professional organizations to stay abreast of current issues in your field(s) of interest and to develop networking contacts.
- Read scientific journals in your areas of interest.
- If you are interested in attending graduate or professional school, become familiar with admission requirements and maintain a high GPA.
- Develop excellent verbal and written communication skills including presentation and technical report writing skills.
- Gain experience with tools, electronics and machinery.
- Some industries such as the manufacturers of electrical devices will train in the specialty of the firm.

**SKILLS**
- Ability to formulate/defend positions
- Ability to follow systematic procedures
- Ability to analyze/organize/interpret data
- Ability to solve open-ended problems
- Ability to use technical equipment
- Ability to make sound judgments
- Ability to speak effectively/listen objectively
- Ability to conduct/explain scientific data
- Ability to work well with others
- Ability to understand measurements
- Aptitude for details, logic and reasoning
- Eye/hand coordination
- Research skills
- Strong background in mathematics and quantum physics

**CAREER AREAS**

**OPERATIONS/PRODUCTION**
- Research and development
- Laboratory testing

**TECHNICAL SALES**
- Sales
- Sales support

**DESIGN AND CONSTRUCTION**
- Project Engineering
- Control Systems
- Field Engineering
- Process Engineering

**EMPLOYERS**
- Industry including: agriculture, cosmetic, environmental, food processing, government, petroleum, pharmaceutical, plastics
- Federal and state government agencies
- Manufacturing facilities including: airplane, automotive, consumer products, food & beverage, metals, microelectronics, pulp & paper, rubber, textiles

**LawProfessions.Tulane.edu**

**HealthProfessions.Tulane.edu**

If you think you might be interested in this major, but you are not absolutely sure, an exploratory advisor can help you explore major and career options, please go to: Explore.Tulane.edu

If you are interested in information about Law Professions, please go to: LawProfessions.Tulane.edu

If you are interested in information about Health Professions, please go to: HealthProfessions.Tulane.edu
What Can I Do with a Major in…
Engineering Physics

EDUCATION
• Teaching
• Educational Research
• Writing and Editing

GENERAL SCIENTIFIC
• Basic and Applied Research
• Consulting
• Testing
• Monitoring/Inspection
• Teaching
• Development
• Quality Control
• Operations and Maintenance

PROFESSIONAL ORGANIZATIONS
American Institute for Aeronautics and Astronautics
www.aiaa.org
American Institute of Chemical Engineers
www.aiche.org
American Society of Mechanical Engineers
www.asme.org
American Institute of Industrial Engineers
www.iienet.org
American Nuclear Society
www.ans.org
American Physical Society
www.aps.org
American Society for Engineering Education
www.asee.org
American Institute of Physics
www.aip.org
Materials Research Society
www.mrs.org
Science & Technology Society
www.avs.org
Society of Manufacturing Engineers
www.sme.org
American Institute of Engineers
www.members-aie.org
American Association of Engineering Societies
www.aaes.org

EDUCATION
• Public and private schools, K-12
• Publishing companies
• Libraries

GENERAL SCIENTIFIC
• Consulting firms
• Biomedical firms

PROFESSIONAL ORGANIZATIONS
American Institute for Aeronautics and Astronautics
www.aiaa.org
American Institute of Chemical Engineers
www.aiche.org
American Society of Mechanical Engineers
www.asme.org
American Institute of Industrial Engineers
www.iienet.org
American Nuclear Society
www.ans.org
American Physical Society
www.aps.org
American Society for Engineering Education
www.asee.org
American Institute of Physics
www.aip.org
Materials Research Society
www.mrs.org
Science & Technology Society
www.avs.org
Society of Manufacturing Engineers
www.sme.org
American Institute of Engineers
www.members-aie.org
American Association of Engineering Societies
www.aaes.org

RELATED WEBSITES & ASSOCIATIONS
Engineering Jobs
www.EngineeringJobs.com
IEEE Job Site
http://careers.ieee.org
United States Office of Personnel Management
www.usajobs.gov
Physics Today Jobs
www.physicstoday.org/jobs
Science Magazine
www.sciencemag.org
Discover Engineering
www.discoverengineering.org
Careers in Science and Engineering
www.nap.edu/readingroom/books/careers
Guide to Graduate Education in Science, Engineering and Public Policy
www.aas.org/spp/sepp/index.htm
ScienceCareers.org
http://sciencecareers.sciencemag.org

For Jobs, internships, resume assistance, interviews, and self-assessments, please go to:
HIRE Tulane GRADS.com
Success.Tulane.edu
advising.TULANE.edu

Tulane University is committed to your academic success and provide several services to assist.