Engineering Physics

2017-2018
Academic Year

School of Science and Engineering

School of Science and Engineering

2001 Percival Stern Hall
Phone: (504) 865-5520
Fax: (504) 862-8702
Email: sse@tulane.edu
Web: tulane.edu/sse/pep/

Tulane University

This information was prepared by Tulane Academic Advising Center.

advising.
TULANE.edu

Tulane University
NEWCOMB-TULANE COLLEGE

GENERAL REQUIREMENTS FOR STUDENTS MATRICULATING IN ACADEMIC YEAR: 2017-2018

DEGREE: **BACHELOR OF SCIENCE IN ENGINEERING** TOTAL CREDITS: 120

MAJOR: ENGINEERING PHYSICS

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

CORE CURRICULUM REQUIREMENTS

Area	Credits	To Be Selected From
First Year Writing	4	ENGL 1010 or Equivalent
TIDES – 1 course in fall semester	1-1.5	
Cultural Knowledge – 1 Humanities 1 Fine Arts	6	Courses designated Humanities and Fine Arts
Cultural Knowledge – Social Science	6	Courses designated Social Science
Cultural Knowledge – Humanities/ Fine Arts or Social Science	6	Courses designated Humanities, Fine Arts, or Social Science
Quantitative Reasoning 2 Math courses	8	MATH 1210 and 1220 or equivalent
Scientific Inquiry – 1 Lab Science 1 Science or Math	7-8	Courses from departments designated Science and Math
Writing Intensive	1	ENGP 4880 or another Writing Intensive
Public Service – 1st Tier 2nd Tier		1000-3000-Level 3000-Level or above
Western Traditions	3	Refer to Undergraduate Core Curriculum Guide
Outside Western Traditions Or Comparative Cultures Intl. Perspectives	3	Refer to Undergraduate Core Curriculum Guide

This information is for students pursuing a minor in ENGINEERING SCIENCE – REQUIREMENTS:

I. Pre-requisite Math and Science Courses:

- MATH 1210, MATH 1220, 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.

MAJOR REQUIREMENTS

Math: MATH 1210 MATH 1220 MATH 2210 MATH 2240 / 4240

Basic Science: PHYS 1310 PHYS 1320 PHYS 2350 PHYS 2360 CHEM 1070, 1075 CHEM 1080, 1085

Product and Experimental Design and Computing Concepts and Applications: ENGP 2310 & ENGP 2020

General Engineering Courses: ENGP 1410 ENGP 2010 ENGP 2011 CENG 2120 ENGP 2430

Materials Science and Engineering: ENGP 3120

Advanced Laboratory: ENGP 3530

Nanoscience and Technology: ENGP 3600

Computation: ENGP 3170 or PHYS 6170 or CENG 3230 (students may instead take MATH 3310) + one additional 3-credit engineering elective

Colloquium: PHYS 3800

Classical Physics Elective: One course chosen from among – PHYS 3630 PHYS 3740 PHYS 4230 or PHYS 4650

Contemporary Physics Elective: One course chosen from among – PHYS 3150 or PHYS 6150 PHYS 3210 or PHYS 6210 PHYS 3230 or PHYS 6230 PHYS 3310 or 6310, PHYS 3450 or 6450 PHYS 3700 or PHYS 6700 or PHYS 4470

Engineering Electives: Consult Faculty Advisor

Broader Technical Elective: Consult Faculty Advisor

Professional Development: Consult Faculty Advisor

Summer Internship: Consult Faculty Advisor

Team Design Project and Professional Practice I and II: Consult Faculty Advisor

- *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.*
- *Pre-med 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	EMPLOYERS
OPERATIONS/PRODUCTION • Research and development • Laboratory testing	• 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
TECHNICAL SALES • Sales • Sales support	• Pharmaceutical companies • Manufacturing companies • Chemical companies
DESIGN AND CONSTRUCTION • Project Engineering • Control Systems • Field Engineering • Process Engineering	• Industry including: agriculture, cosmetic, environmental, food processing, government, petroleum, pharmaceutical, plastics • Manufacturing facilities including: airplane, automotive, consumer products, food & beverage, metals, microelectronics, pulp & paper, rubber, textiles

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

GENERAL SCIENTIFIC
- Basic and Applied Research
- Consulting
- Testing
- Monitoring/Inspection
- Teaching
- Development
- Quality Control
- Operations and Maintenance
- 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
Society of Physics Students
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

National Society of Professional Engineers
www.nspe.org

Society of Women Engineers
http://societyofwomenengineers.swe.org

American Society for Engineering Education
www.asee.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.aaas.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

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

Success .Tulane.edu

advising. TULANE.edu