

Chemical Engineering

2017-2018
Academic Year



School of Science and Engineering

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

DEGREE: **BACHELOR OF SCIENCE IN ENGINEERING**

TOTAL CREDITS: 127

MAJOR: **CHEMICAL ENGINEERING**

MINIMUM CUMULATIVE GRADE POINT AVERAGE: 2.0

MINIMUM MAJOR GRADE POINT AVERAGE: 2.0

CORE CURRICULUM REQUIREMENTS			MAJOR REQUIREMENTS
Area	Credits	To Be Selected From	
First Year Writing	4	ENGL 1010 or Equivalent	Chemical Engineering Required Courses: CENG 2110 CENG 2120 CENG 2320 CENG 2500 CENG 3110 CENG 3230 CENG 3240* CENG 3390 CENG 3340 CENG 4150 CENG 4310 CENG 4500 CENG 4750
TIDES – 1 course in fall semester	1-1.5		
Cultural Knowledge – 1 Humanities 1 Fine Arts	6	Courses designated Humanities and Fine Arts	*Students who declare the Chemical Engineering major in fall 2014 or thereafter are required to earn a minimum grade of C- in each CENG required course in order to receive credit for the Bachelor's degree.
Cultural Knowledge – 2 Social Sciences	6	Courses designated Social Science	
Cultural Knowledge – 1 Humanities, Fine Arts or Social Science	3	Courses designated Humanities, Fine Arts, or Social Science	Mathematics Required Courses MATH 1210** MATH 1220+ MATH 2210 MATH 2240
Cultural Knowledge – 1 Humanities, Fine Arts or Social Science	3		+Students receiving a score of 4 or 5 on the AP/AB calculus test are encouraged to enroll in consolidated calculus MATH 1310.
Quantitative Reasoning 2 Math courses	8	MATH 1220 and 2210 or equivalent	**MATH 1210 is not required for the major, but it is a prerequisite for MATH 1220.
Scientific Inquiry – 1 Lab Science 1 Science or Math	7-8	Courses from departments designated Science and Math	Chemistry Required Courses CHEM 1070, 1075 CHEM 1080, 1085 CHEM 2410, 2415 CHEM 2420, 2425
Writing Intensive		CENG 3240	Physics Required Courses PHYS 1310 and PHYS 1320
Public Service – 1 st Tier 2 nd Tier		1000-3000-Level 3000-Level or above	Advanced Chemistry Electives – 2 courses to be selected from: Applied Biochemistry (CENG 4450/4460), Physical Chemistry I and II (CHEM 3110, 3120), Inorganic Chemistry (CHEM 3210), Instrumental Analysis (CHEM 3310), Organometallic Chemistry (CHEM 4230) Neurochemistry (CHEM 4020), Biochemistry (CHEM 3830, 3840) or Environmental Geochemistry (EENS 4360). Other courses with permission only.
Western Traditions	3	Refer to Undergraduate Core Curriculum Guide	Technical Electives – 2 technical electives are required. At least one of the courses must be at the 3000 level or above. A technical elective is any non-required course offered by a department in the School of Science & Engineering.
Outside Western Traditions Comparative Cultures Intl. Perspectives	3	Refer to Undergraduate Core Curriculum Guide	Engineering and Advanced Engineering Elective Courses An Engineering elective is any non-required CENG course, a course offered by one of the engineering departments (BMEN, ENGP), or by Computer Science (COSC). (Note that a course such as CENG 4890, for example, could count as either a Technical or Engineering elective, but no single course can be used to satisfy two requirements.) .Two Engineering Elective courses are required, with at least one at the 3000-level or above. *Writing Intensive, CENG 3240 (Unit Operations Lab) Study Abroad: Ireland, Germany, Switzerland

A minor is not available for Chemical Engineering.

- 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 "majors only" classes, and are on list serves 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.

What Can I Do with a Major in...

Chemical Engineering

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.
- Research your state's requirements for engineering testing and certification.

SKILLS

- Using scientific rules and methods to solve problems
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems
- Giving full attention to what other people are saying, taking time to understand the points being made and asking questions as appropriate
- Identifying complex problems and reviewing related information to develop and evaluate options and implement procedures
- Understanding written sentences and paragraphs in work related documents
- Determining causes of operating errors and deciding what to do about it
- Understanding the implications of new information for both current and future problem-solving and decision-making
- Generating or adapting equipment and technology to serve user needs
- Using mathematics to solve problems
- Communicating effectively in writing as appropriate for the needs of the audience

CAREER AREAS

OPERATIONS/PRODUCTION

- Research and development
- Laboratory testing

EMPLOYERS

- Chemical industry including: agricultural chemicals, cosmetic, environmental, food processing, government, industrial chemicals, 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

- Chemical industry including: agricultural chemicals, cosmetic, environmental, food processing, government, industrial chemicals, 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:



If you are interested in information about Law Professions, please go to:



If you are interested in information about Health Professions, please go to:



What Can I Do with a Major in...

Chemical Engineering

ENVIRONMENTAL

- Waste Management
- Soil Conservation

- Environmental focused corporations
- Environmental nonprofits
- Federal and state government agencies and departments

OTHER

- Law
- Consultant
- Research

- Consulting firms
- Biomedical firms

PROFESSIONAL ORGANIZATIONS

American Institute of Chemical Engineers
www.aiche.org

American Chemical Society
www.acs.org

American Institute of Engineers
www.members-aie.org

American Association of Engineering Societies
www.aaes.org

Institution of Chemical Engineers
www.icheme.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

Discover Engineering
www.discoverengineering.org

Chemical Engineering Magazine
www.che.com

Chemical and Engineering Newspapers
<http://pubs.acs.org>

Chemical Engineering Progress
www.cepmagazine.org

The Chemical Engineers' Resource Page
www.cheresources.com

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:



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

