(For students admitted in 2015-16 under the 4-year degree)

BEng in Chemical and Biomolecular Engineering

In addition to the requirements of their major programs, students are required to complete the University requirements for graduation. For details please refer to the respective section on this website.

Some courses can be used to fulfill both Major and University Common Core Requirements. Students may reuse a maximum of 9 credits of these courses to count towards both Requirements.

Students may use no more than 6 credits earned from courses offered in pure online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

Major Requirements

Engineering Fundamental Course(s)

			Credit(s) attained
COMP		Note: COMP 1021 OR COMP 1022P OR COMP 1022Q OR COMP 2011	3-4
COMP	1021	Introduction to Computer Science	3
COMP	1022P	Introduction to Computing with Java	3
COMP	1022Q	Introduction to Computing with Excel VBA	3
COMP	2011	Programming with C++	4
ENGG	1010	Academic Orientation	0
CHEM		Note: CHEM 1010 OR CHEM 1020	3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry IB	3
LANG	2030	Technical Communication I	3
MATH		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7
MATH	1012	Calculus IA	4
MATH	1013	Calculus IB	3
MATH	1014	Calculus II	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3
MATH	1024	Honors Calculus II	3
MATH	2011	Introduction to Multivariable Calculus	3
MATH	2350	Applied Linear Algebra and Differential Equations	3
PHYS		Note: PHYS 1112 OR PHYS 1312	3
PHYS	1112	General Physics I with Calculus	3
PHYS	1312	Honors General Physics I	3

SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4
CENG	1000	Introduction to Chemical and Biological Engineering	3
CIVL	1100	Discovering Civil and Environmental Engineering	3
COMP	1021	Introduction to Computer Science	3
ELEC	1100	Introduction to Electro-Robot Design	4
ELEC	1200	A System View of Communications: from Signals to Packets	4
IEDA	2010	Industrial Engineering and Decision Analytics	3
IEDA	2200	Engineering Management	3
MECH	1901	Automotive Engineering	3
MECH	1902	Energy Systems in a Sustainable World	3
MECH	1905	Buildings for Contemporary Living	3
MECH	1906	Mechanical Engineering for Modern Life	3

Required Course(s)

			Credit(s) attained
CENG	1000	Introduction to Chemical and Biological Engineering	3
CENG	1010	Academic and Professional Development I	0
CENG	1600	Biotechnology and Its Business Opportunities	3
CENG	1980	Industrial Training	0
CENG	2110	Process Principles	3
CENG	2210	Chemical and Biological Engineering Thermodynamics	3
CENG	2220	Process Fluid Mechanics	3
CENG	3120	Process Design and Integration	3
CENG	3210	Separation Processes	3
CENG	3220	Heat and Mass Transfer	3
CENG	3230	Chemical and Biological Reaction Engineering	3
CENG	3910	Chemical Engineering Laboratory I	3
CENG	3926	Biomolecular Engineering Laboratory	3
CENG	4120	Process Dynamics and Control	3
CENG	4620	Bioproducts and Processing	3
CENG	4640	Biomolecular Engineering**	3
CENG	4913	Chemical and Biomolecular Engineering Project	7
BIEN/LIFS		Note: BIEN 2610 OR LIFS 1901 OR LIFS 1902 OR LIFS 2040 OR LIFS 2210	3
BIEN	2610	Chemical Biology for Engineers	3
LIFS	1901	General Biology I	3
LIFS	1902	General Biology II	3
LIFS	2040	Cell Biology	3
LIFS	2210	Biochemistry I	3
ENGG	2010	Engineering Seminar Series	0
CHEM	1050	Laboratory for General Chemistry I	1
CHEM	2111	Fundamentals of Organic Chemistry	3

CHEM		Note: CHEM 2155 OR CHEM 2355	1
CHEM	2155	Fundamental Organic Chemistry Laboratory	1
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1
CHEM	2311	Analytical Chemistry	3

Elective(s)

			Minimum credit(s) required
CENG/LIFS		CBME Depth Elective (1 course from the specified elective list)	3
CENG	4130	Plant Design and Economics	3
CENG	4150	Product and Process Design in Chemical and Biological Engineering	3
CENG	4630	Food Processing Technology	3
CENG	4660	Introduction to Biomicrosystem	3
CENG	4670	Pharmaceutical Engineering	3
LIFS	3010	Molecular and Cellular Biology I	3
LIFS	3030**	Molecular Biology of the Cell	3
LIFS	3040	Animal Physiology	3
LIFS	3060	Microbiology	3
LIFS	3140	General Genetics	4
LIFS	3150	Biostatistics	3

Student may opt to graduate with or without an option. Students who take an option MUST complete all requirements specified in addition to the major requirements.

Option(s)

Research Option

Students should declare their intention to enroll in the option preferably at the end of their second year of study and no later than the end of the first term of their third year of study.

Required Course(s)

			Credit(s) attained
CENG		Note: Attainment of a minimum of 6 credits from CENG 4980 by taking the course for at least two terms	6
CENG	4980	Investigation Project	3

***Remarks on course(s):*

- CENG 4640: The course title will be changed to "Synthetic Biology and Biomolecular Engineering" subject to approval.
- LIFS 3030: The course was last offered in 2013-14 and was deleted subsequently.