(For students admitted in 2021-22 under the 4-year degree)

BEng in Sustainable Energy 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 self-paced 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.

Some courses in the curriculum have been previously coded with CORE-prefix where the special CORE-prefix has been replaced by the domain code of courses starting from Fall 2023-24. Students who have registered with these CORE-coded courses may look up their latest course codes by consulting the conversion table published on the Common Core website.

Major Requirements

Engineering Fundamental Course(s)

			Credit(s) attained
COMP		Note: COMP 1021 OR COMP 1022P OR COMP 2011 OR COMP 2012H	3-5
COMP	1021	Introduction to Computer Science	3
COMP	1022P	Introduction to Computing with Java	3
COMP	2011	Programming with C++	4
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5
ELEC/MATH		Note: (ELEC 2600 OR ELEC 2600H) OR MATH 2011 OR MATH 2111 OR MATH 2351 (3 courses out of 5)	9-10
ELEC	2600	Probability and Random Processes in Engineering	4
ELEC	2600H	Honors Probability and Random Processes in Engineering	4
MATH	2011	Introduction to Multivariable Calculus	3
MATH	2111	Matrix Algebra and Applications	3
MATH	2351	Introduction to Differential Equations	3
ENGG	1010	Academic Orientation	0
CHEM		Note: CHEM 1010 OR CHEM 1020	3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry I	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
PHYS		Note: PHYS 1112 OR PHYS 1312	3
PHYS	1112	General Physics I with Calculus	3
PHYS	1312	Honors General Physics I	3
PHYS		Note: PHYS 1114 OR PHYS 1314	3
PHYS	1114	General Physics II	3
PHYS	1314	Honors General Physics II	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
BIEN	1010	Introduction to Biomedical Engineering	3
CENG	1000	Introduction to Chemical and Biological Engineering	3
CENG	1500	A First Course on Materials Science and Applications	3
CENG	1700	Introduction to Environmental 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
ENGG	1100	First Year Cornerstone Engineering Design Project Course	3
IEDA	2010	Introduction of Industrial Engineering and Decision Analytics	3
IEDA	2200	Engineering Management	3
ISDN	1002	Redefining Problems for the Real Needs	3
ISDN	1006	Human-centered Innovation	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
MECH	1907	Introduction to Aerospace Engineering	3

Required Course(s)

			Credit(s) attained
ENEG	2910	Industrial Training	0
ENEG	2990	Academic and Professional Development I	0
ENEG	3110	Materials for Energy Technologies	3

ENEG/PPOL		Note: ENEG 3220 OR PPOL 3210	3
ENEG	3220	Energy Initiatives Forging Future Engineers	3
PPOL	3210	Energy Policy	3
ENEG	3910	Sustainable Energy Laboratory	3
ENEG	4920	Final Year Design Project	6
ENEG	4990	Academic and Professional Development II	0
CENG/MECH/ SUST		Note: CENG 1700 OR MECH 1902 OR SUST 1000	3
CENG	1700	Introduction to Environmental Engineering	3
MECH	1902	Energy Systems in a Sustainable World	3
SUST	1000	Sustainability Fundamentals	3
CENG/MECH		Note: CENG 2210 OR MECH 2310	3
CENG	2210	Chemical and Biological Engineering Thermodynamics	3
MECH	2310	Thermodynamics	3
CENG/MECH		Note: CENG 2220 OR MECH 2210	3
CENG	2220	Transport Phenomena I	3
MECH	2210	Fluid Mechanics	3
CENG/MECH		Note: CENG 3220 OR MECH 3310	3
CENG	3220	Transport Phenomena II	3
MECH	3310	Heat Transfer	3
CIVL	2410	Environmental Assessment and Management	3
ELEC	2420	Basic Electronics	3
ENGG	2010	Engineering Seminar Series	0
MECH	3300	Energy Conversion	3
MECH	3630	Electrical Technology	3
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3

Elective(s)

			Minimum credit(s) required
SENG		Area Electives (6 courses from the specified elective list, of which at least 1 course should be taken from each area except Research)	18
Energy Generation			
ENEG	4110**	Wind and Wave Power	3
ENEG	4120**	Heat and Power Generation	3
CENG	4140	Energy Resources, Conversions and Technologies	3
ELEC	4530	Fundamentals of Photovoltaic and Renewable Energy	3
MECH	4902	Solar Energy Conversion Technology	3
MECH	4912	Green Technologies for Buildings, Energy and Water	3

Energy Storage and Distribution

ENEG	4310**	Smart Energy Systems	3
ENEG	4320	Energy Storage Technology	3

Energy Utilization

ENEG	4210	Optimization of Energy Systems	3
CENG	4140	Energy Resources, Conversions and Technologies	3
MECH	4340	Air Conditioning Systems	3
MECH	4360	Introduction to Intelligent Building Systems	3
MECH	4902	Solar Energy Conversion Technology	3
MECH	4912	Green Technologies for Buildings, Energy and Water	3

Research

ENEG	4980	Investigation Project	3

Sustainability

CIVL	4450	Carbon Footprint Analysis and Reduction	3
ENVR	3410	Economics for Environmental Policy and Management	3

***Remarks on course(s):*

- ENEG 4110: This is a new course subject to approval.
- ENEG 4120: This is a new course subject to approval.
- ENEG 4310: This is a new course subject to approval.
- MECH 1901: The course was last offered in 2017-18 and was deleted subsequently.