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

BEng in Mechanical 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 6 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
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		Note: MATH 2111 OR MATH 2350 OR MATH 2351	3
MATH	2111	Matrix Algebra and Applications	3
MATH	2350	Applied Linear Algebra and Differential Equations	3
MATH	2351	Introduction to 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

CHEM/LIFS/ PHYS	Science 1000-level course (Any 1 course of the subject and level as specified)	3

Required Course(s)

			Credit(s) attained
MECH	1990	Industrial Training	0
MECH	2020	Statics and Dynamics	3
MECH	2040	Solid Mechanics I	3
MECH	2210	Fluid Mechanics	3
MECH	2310	Thermodynamics	3
MECH	2410	Engineering Materials I	3
MECH	2520	Design and Manufacturing I	3
MECH	2907	Mechatronic Design and Prototyping	3
MECH	3030	Mechanisms of Machinery	3
MECH		Note: MECH 3300 OR MECH 3420 OR MECH 3520	3
MECH	3300	Energy Conversion	3
MECH	3420	Engineering Materials II	3
MECH	3520	Design and Manufacturing II	3
MECH	3310	Heat Transfer	3
MECH	3610	Control Principles	3
MECH	3630	Electrical Technology	3
MECH	3830	Laboratory	3
MECH	4900	Final Year Design Project	6
ELEC	2420	Basic Electronics	3
ENGG	2010	Engineering Seminar Series	0
LANG	4034	Technical Communication II for Mechanical and Aerospace Engineering	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)

Energy Option

Elective Course(s)			Minimum credit(s) required
MECH		MECH Electives in Energy (3 courses from the specified elective list. Courses taken as Major Required Courses or Elective Courses of other MECH Options may not be counted towards this elective requirement.)	9
MECH	1902	Energy Systems in a Sustainable World	3
MECH	3110	Materials for Energy Technologies	3
MECH	3300	Energy Conversion	3

MECH	3420	Engineering Materials II	3
MECH	4010	Materials Failure in Mechanical Applications	3
MECH	4340	Air Conditioning Systems	3
MECH	4350	Indoor Air Quality in Buildings	3
MECH	4360	Introduction to Intelligent Building Systems	3
MECH	4430	Materials Characterization	3

Engineering Design Option

Elective Course(s)			**Minimum credit(s) required**
MECH		MECH Electives in Engineering Design (3 courses from the specified elective list. Courses taken as Major Required Courses or Elective Courses of other MECH Options may not be counted towards this elective requirement.)	9
MECH	1901	Automotive Engineering	3
MECH	3510	CAD/CAM	3
MECH	3520	Design and Manufacturing II	3
MECH	3710	Manufacturing Processes and Systems	3
MECH	4710	Introduction to Robotics	3
MECH	4720	Introduction to Precision Engineering	3
MECH	4740	Numerical Methods in Engineering	3

Materials Option

Elective Course(s)			**Minimum credit(s) required**
MECH		MECH Electives in Materials (3 courses from the specified elective list. Courses taken as Major Required Courses or Elective Courses of other MECH Options may not be counted towards this elective requirement.)	9
MECH	3020	Solid Mechanics II	3
MECH	3110	Materials for Energy Technologies	3
MECH	3400	Introduction to Composite Materials	3
MECH	3420	Engineering Materials II	3
MECH	4010	Materials Failure in Mechanical Applications	3
MECH	4430	Materials Characterization	3
MECH	4450	Introduction to Finite Element Analysis	3
MECH	4750	Mechanical Vibration	3

Research Option

Required Course(s)			**Credit(s) attained**
MECH	4995	Research Project	6