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

BEng in Industrial Engineering and Engineering Management

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
CHEM/PHYS		Note: CHEM 1010 OR CHEM 1020 OR PHYS 1114 OR PHYS 1314	3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry IB	3
PHYS	1114	General Physics II	3
PHYS	1314	Honors General Physics II	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	2111	Matrix Algebra and Applications	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
IEDA	2010	Industrial Engineering and Decision Analytics	3
IEDA	2200	Engineering Management	3
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
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
IEDA	1010	Academic and Professional Development I	0
IEDA	1020	Academic and Professional Development II	0
IEDA		Note: IEDA 1990 OR IEDA 1991	0
IEDA	1990	Industrial Training	0
IEDA	1991	Industrial Experience	0
IEDA		Note: IEDA 2010 OR IEDA 2200	3
IEDA	2010	Industrial Engineering and Decision Analytics	3
IEDA	2200	Engineering Management	3
IEDA	2100	Computing in Industrial Applications	3
IEDA	2150	Product Design	3
IEDA	2410	Logistics and Freight Transportation Operations	3
IEDA	2510	Engineering Probability and Statistics	4
IEDA	3010	Prescriptive Analytics	3
IEDA	3130	Ergonomics and Safety Management	3
IEDA	3230	Engineering Economics and Accounting	3
IEDA	3270	Quality Engineering	3
IEDA	3300	Industrial Data Systems	3
IEDA	4100	Integrated Production Systems	3
IEDA	4130	System Simulation	3
IEDA	4200	Design of Logistics and Manufacturing Systems	3

IEDA		Note: IEDA 4901 OR IEDA 4990 (Students taking the Research Option must take IEDA 4901)	6
IEDA	4901	Final Year Thesis	6
IEDA	4990	Industrial Engineering Design Project	6
ENGG	2010	Engineering Seminar Series	0
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3

Elective(s)

			Minimum credit(s) required
IEDA/CENG/ ELEC		IEEM Electives (3 courses from the specified elective list. Courses taken as Option Required Courses may not be counted towards this elective requirement.)	9
IEDA	3150	Manufacturing Processes	3
IEDA	3250	Operations Research II	3
IEDA	3330	Introduction to Financial Engineering	3
IEDA	4000	Special Topics	1-3
IEDA	4170	Product Design and Lifecycle Management	3
IEDA	4180	Service Engineering and Management	3
IEDA	4650	Engineering Psychology	3
CENG	1500	A First Course on Materials Science and Applications	3
ELEC	1100	Introduction to Electro-Robot Design	4

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)

Financial Engineering Option

Students with CGA of 3.0 or above may apply for enrollment in the Financial Engineering Option. In addition, students in the Option should take IEDA 3250 as specified in the major requirements.

Required Course(s)

			Credit(s) attained
IEDA	3330	Introduction to Financial Engineering	3

Elective Course(s)

			Minimum credit(s) required
IEDA/FINA/ ISOM/RMBI		Financial Engineering Electives (2 courses from the specified elective list)	6
IEDA	4331	Quantitative Methods in Financial Engineering	3
FINA	3103	Intermediate Investments	3

ISOM	4530	Statistical Analysis of Financial Data in R/S-plus	4
RMBI	4210	Quantitative Methods for Risk Management	3

Product Design and Marketing Option

Required Course(s)

			Credit(s) attained
MARK	2120	Marketing Management	3

Elective Course(s)

			Minimum credit(s) required
IEDA/MARK		Product Design and Marketing Electives (3 courses from the specified elective list. Courses taken as Major Electives may not be counted towards this elective requirement.)	9
IEDA	4170	Product Design and Lifecycle Management	3
MARK	3410	Promotion and Advertising Management	4
MARK	3450	Analytical Techniques for Product Marketing	4
MARK	3470	Services Marketing	4
MARK	3480	Pricing Strategy	4
MARK	3510	Business to Business Marketing	4
MARK	4450	Brand Management	4

Research Option

Students in the Research Option should also take IEDA 4901 as specified in the major requirements.

Elective Course(s)

			Minimum credit(s) required
IEDA		IEEM Advanced Electives (2 courses from the specified elective list. Students should seek approval of their advisor for the choices of courses.)	6
IEDA	4900	Independent Study in Industrial Engineering and Decision Analytics	3
IEDA	5170	Advanced Production Planning and Control	3
IEDA	5230	Deterministic Models in Operations Research	3
IEDA	5260	Design and Analysis of Engineering Experiments	3