

*(For students admitted in 2016-17 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.

### **Major Requirements**

#### **Engineering Fundamental Course(s)**

			<b>Credit(s) attained</b>
COMP		Note: COMP 1021 <u>OR</u> COMP 1022P <u>OR</u> COMP 1022Q <u>OR</u> 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	Introduction to Object-oriented Programming	4
ENGG	1010	Academic Orientation	0
CHEM/PHYS		Note: CHEM 1010 <u>OR</u> CHEM 1020 <u>OR</u> PHYS 1114 <u>OR</u> PHYS 1154 <u>OR</u> PHYS 1314	2-3
CHEM	1010	General Chemistry IA	3
CHEM	1020	General Chemistry IB	2
PHYS	1114	General Physics II	3
PHYS	1154**	Accelerated General Physics II	2
PHYS	1314	Honors General Physics II	3
LANG	2030	Technical Communication I	3
MATH		Note: [(MATH 1012 <u>OR</u> MATH 1013 <u>OR</u> MATH 1023) <u>AND</u> (MATH 1014 <u>OR</u> MATH 1024)] <u>OR</u> [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 <u>OR</u> 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
IELM	2010	Industrial Engineering and Modern Logistics	3
IELM	2200	Engineering Management	3
CENG	1000	Introduction to Chemical and Biomolecular 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)

			<b>Credit(s) attained</b>
IELM	1010	Academic and Professional Development I	0
IELM	1020	Academic and Professional Development II	0
IELM		Note: IELM 1990 <u>OR</u> IELM 1991	0
IELM	1990	Industrial Training	0
IELM	1991	Industrial Experience	0
IELM		Note: IELM 2010 <u>OR</u> IELM 2200	3
IELM	2010	Industrial Engineering and Modern Logistics	3
IELM	2200	Engineering Management	3
IELM	2100	Computing in Industrial Applications	3
IELM	2150	Product Design	3
IELM	2410	Logistics and Freight Transportation Operations	3
IELM	2510	Engineering Probability and Statistics	4
IELM	3010	Operations Research I	3
IELM	3130	Ergonomics and Safety Management	3
IELM	3230	Engineering Economy	3
IELM	3270	Quality Engineering	3
IELM	3300	Industrial Data Systems	3
IELM	4100	Integrated Production Systems	3
IELM	4130	System Simulation	3
IELM	4200	Design of Logistics and Manufacturing Systems	3
IELM		Note: IELM 4901 <u>OR</u> IELM 4990 (Students taking the Research Option must take IELM 4901)	6
IELM	4901	Final Year Thesis	6
IELM	4990	Industrial Engineering Design Project	6
ENGG	2010	Engineering Seminar Series	0

LANG	4032	Technical Communication II for Industrial Engineering and Logistics Management	3
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### Elective(s)

			<b>Minimum credit(s) required</b>
IELM/CENG/ ELEC		IEEM Intermediate / Advanced Electives (3 courses from the specified elective list. Courses taken as Option Required Courses may not be counted towards this elective requirement.)	9
IELM	3150	Manufacturing Processes	3
IELM	3250	Operations Research II	3
IELM	3330	Introduction to Financial Engineering	3
IELM	4170	Product Design and Lifecycle Management	3
IELM	4180	Service Engineering and Management	3
IELM	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 IELM 3250 as specified in the major requirements.

#### Required Course(s)

			<b>Credit(s) attained</b>
IELM	3330	Introduction to Financial Engineering	3

#### Elective Course(s)

			<b>Minimum credit(s) required</b>
FINA/ISOM/ RMBI		Financial Engineering Electives (2 courses from the specified elective list)	6
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)

			<b>Credit(s) attained</b>
MARK	2120	Marketing Management	3

<i>Elective Course(s)</i>	<b>Minimum credit(s) required</b>
IELM/MARK	9
	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.)
IELM 4170	3
MARK 3410	4
MARK 3450	4
MARK 3470	4
MARK 3480	4
MARK 3510	4
MARK 4450	4

**Research Option**

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

<i>Elective Course(s)</i>	<b>Minimum credit(s) required</b>
IELM	6
	IEEM Advanced Electives (2 courses from the specified elective list. Students should seek approval of their advisor for the choices of courses.)
IELM 4900	3
IELM 5170	3
IELM 5230	3
IELM 5260	3

**\*\*Remarks on course(s):**  
 - PHYS 1154: The course was last offered in 2013-14 and was deleted subsequently.