*(For students admitted in 2016-17 under the 4-year degree)*

# BEng in Electronic 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 |
|---|---|---|---|
| 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 |
| 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 |

| | | | |
|---|---|---|---|
| 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 |
| ELEC | 1100 | Introduction to Electro-Robot Design | 4 |
| ELEC | 1200 | A System View of Communications: from Signals to Packets | 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 |
| 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 |
|---|---|---|---|
| ELEC | 1100 | Introduction to Electro-Robot Design | 4 |
| ELEC | 1200 | A System View of Communications: from Signals to Packets | 4 |
| ELEC | 1991 | Industrial Experience (Electronic Engineering) | 0 |
| ELEC | | Note: ELEC 2100 OR ELEC 2100H | 4 |
| ELEC | 2100 | Signals and Systems | 4 |
| ELEC | 2100H | Honors Signals and Systems | 4 |
| ELEC | 2200 | Digital Circuits and Systems | 4 |
| ELEC | 2300 | Computer Organization | 4 |
| ELEC | 2400 | Electronic Circuits | 4 |
| ELEC | 2910 | Academic and Professional Development I | 0 |
| ELEC | 3910 | Academic and Professional Development II | 0 |
| ELEC | | Note: ELEC 4900 OR ELEC 4901 (Students taking the Research Option must take ELEC 4901) | 6 |
| ELEC | 4900 | Final Year Design Project | 6 |
| ELEC | 4901 | Final Year Thesis | 6 |
| ENGG | 2010 | Engineering Seminar Series | 0 |
| LANG | 4031 | Technical Communication II for ECE & CPEG | 3 |

## Elective(s)

| | | | Minimum credit(s) required |
|---|---|---|---|
| ELEC | | ELEC 4000-level Electives (Any 2 courses of the subject and level as specified. ELEC 4940 cannot be used to count towards this elective requirement) | 6 |
| ELEC | | Area Courses (3 courses from the specified elective list) | 12 |
| ELEC | 3100 | Signal Processing and Communications | 4 |
| ELEC | 3200 | System Modeling, Analysis and Control | 4 |
| ELEC | 3300 | Introduction to Embedded Systems | 4 |
| ELEC | 3400 | Introduction to Integrated Circuits and Systems | 4 |
| ELEC | 3500 | Microelectronic Devices and Technology | 4 |
| ELEC | 3600 | Electromagnetics: From Wireless to Photonic Applications | 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)

### Research Option

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

*Required Course(s)*

| | | | Credit(s) attained |
|---|---|---|---|
| ELEC | 5900 | Modern Engineering Research Methodologies | 1 |

*Elective Course(s)*

| | | | Minimum credit(s) required |
|---|---|---|---|
| | | Advanced Elective Courses approved by advisor (at least one UROP course taken prior to the commencement of Final Year Thesis, and one PG-level course) | 6 |
| UROP | 1000 | Undergraduate Research Opportunities | 0 |
| UROP | 1100 | Undergraduate Research Opportunities Series 1 | 1 |
| UROP | 2100 | Undergraduate Research Opportunities Series 2 | 1 |
| UROP | 3100 | Undergraduate Research Opportunities Series 3 | 1 |