



**DEGREE CHECKLIST
2021-2022**

**BACHELOR OF ENGINEERING (BEng)
SOFTWARE ENGINEERING
BIG DATA STREAM**

NAME

STUDENT #

Students are strongly advised to refer to online Academic Calendars before enrolling into courses: <http://calendars.registrar.yorku.ca/>

| | | COURSES | | CREDITS EARNED | GRADE |
|--|-------------------|---|--|---------------------------|--------------|
| First Year Courses | | | | | |
| <input type="checkbox"/> | SC/CHEM 1100 4.00 | Chemistry and Materials Science for Engineers | | | |
| <input type="checkbox"/> | LE/EECS 1011 3.00 | Computational Thinking Through Mechatronics | | | |
| <input type="checkbox"/> | LE/EECS 1021 3.00 | Object Oriented Programming from Sensors to Actuators | | | |
| <input type="checkbox"/> | LE/EECS 1028 3.00 | Discrete Mathematics for Engineers | | | |
| <input type="checkbox"/> | LE/ENG 1101 4.00 | Renaissance Engineer 1: Ethics, Communication and Problem Solving | | | |
| <input type="checkbox"/> | LE/ENG 1102 4.00 | Renaissance Engineer 2: Engineering Design Principles | | | |
| <input type="checkbox"/> | SC/MATH 1013 3.00 | Applied Calculus I | | | |
| <input type="checkbox"/> | SC/MATH 1014 3.00 | Applied Calculus II | | | |
| <input type="checkbox"/> | SC/MATH 1025 3.00 | Applied Linear Algebra | | | |
| <input type="checkbox"/> | SC/PHYS 1800 3.00 | Engineering Mechanics | | | |
| <input type="checkbox"/> | SC/PHYS 1801 3.00 | Electricity, Magnetism and Optics for Engineers | | | |
| Second Year Courses | | | | | |
| <input type="checkbox"/> | SC/MATH 1090 3.00 | Introduction to Logic for Computer Science | | | |
| <input type="checkbox"/> | LE/EECS 2011 3.00 | Fundamentals of Data Structures | | | |
| <input type="checkbox"/> | LE/EECS 2021 4.00 | Computer Organization | | | |
| <input type="checkbox"/> | LE/EECS 2030 3.00 | Advanced Object Oriented Programming | | | |
| <input type="checkbox"/> | LE/EECS 2032 4.00 | Introduction to Embedded Systems | | | |
| <input type="checkbox"/> | LE/EECS 2200 3.00 | Electrical Circuits | | | |
| <input type="checkbox"/> | LE/EECS 2311 3.00 | Software Development Project | | | |
| <input type="checkbox"/> | LE/ENG 2001 3.00 | Engineering Projects: Management, Economics & Safety | | | |
| <input type="checkbox"/> | LE/ENG 2003 3.00 | Effective Engineering Communication | | | |
| <input type="checkbox"/> | SC/MATH 2015 3.00 | Applied Multivariate and Vector Calculus | | | |
| <input type="checkbox"/> | SC/MATH 2930 3.00 | Introduction to Probability and Statistics | | | |
| <input type="checkbox"/> | SC/PHYS 2020 3.00 | Electricity and Magnetism | | | |
| <input type="checkbox"/> | SC/PHYS 2211 1.00 | Experimental Electromagnetism | | | |
| BEng, Software Engineering, Big Data Stream | | | | Page 1 of 2 | |

| Third Year Courses | | | | |
|--|--------------------------|--|--|--|
| | <input type="checkbox"/> | LE/EECS 3101 3.00 | Design and Analysis of Algorithms | |
| | <input type="checkbox"/> | LE/EECS 3201 4.00 | Digital Logic Design | |
| Big Data Stream | <input type="checkbox"/> | LE/EECS 3421 3.0 | Introduction to Database Systems | |
| | <input type="checkbox"/> | LE/EECS 3221 3.00 | Operating System Fundamentals | |
| | <input type="checkbox"/> | LE/EECS 3311 3.00 | Software Design | |
| | <input type="checkbox"/> | LE/EECS 3342 3.00 | System Specification and Refinement | |
| | <input type="checkbox"/> | LE/ENG 3000 3.00 | Professional Engineering Practice | |
| | <input type="checkbox"/> | LE/ESSE 2210 3.00 or ES/ENVS 2150 3.00 | Engineering and the Environment or Environment, Technology and Sustainable Society I | |
| At least 3 additional credits from SC/BIOL 1000 3.00, SC/BIOL 1001 3.00, SC/CHEM 1001 3.00, SC/CHEM 2011 3.00, LE/ESSE 1011 3.00, LE/ESSE 1012 3.00, SC/PHYS 1070 3.00, SC/PHYS 1470 3.00, SC/PHYS 2010 3.00, SC/PHYS 2040 3.00, SC/PHYS 2060 3.00, HH/IHST 1001 3.00, HH/IHST 1002 3.00 | <input type="checkbox"/> | | | |
| Complementary Studies (9 credits) | <input type="checkbox"/> | | | |
| | <input type="checkbox"/> | | | |
| | <input type="checkbox"/> | | | |
| Fourth Year Courses | | | | |
| Complementary Studies (3 credits) | <input type="checkbox"/> | | | |
| | <input type="checkbox"/> | LE/EECS 3216 3.00 | Digital Systems Engineering: Modeling, Implementation and Validation | |
| | <input type="checkbox"/> | LE/EECS 4312 3.00 | Software Engineering Requirements | |
| | <input type="checkbox"/> | LE/EECS 4313 3.00 | Software Engineering Testing | |
| | <input type="checkbox"/> | LE/EECS 4314 3.00 | Advanced Software Engineering | |
| | <input type="checkbox"/> | LE/EECS 4315 3.00 | Mission-Critical Systems | |
| | <input type="checkbox"/> | LE/EECS 4413 3.00 | Building E-Commerce Systems | |
| Full year course | <input type="checkbox"/> | LE/ENG 4000 6.00 | Engineering Project | |
| Big Data Stream | <input type="checkbox"/> | LE/EECS 4404 3.0 | Introduction to Machine Learning and Pattern Recognition | |
| Big Data Stream | <input type="checkbox"/> | LE/EECS 4412 3.0 | Data Mining | |
| Big Data Stream | <input type="checkbox"/> | LE/EECS 4415 3.0 | Big Data Systems | |
| Big Data Stream | <input type="checkbox"/> | LE/EECS 4411 3.0 or LE/EECS 4414 3.0 | Database Management Systems or Information Networks | |
| TOTAL CREDITS & CGPA (minimum overall GPA of 5.00 required to graduate in the BEng program) | | | | |
| General Prerequisite: Most 2000-, 3000-, and 4000-level EECS courses require the following general (that is, common) prerequisites, in addition to other course-specific prerequisites: a cumulative grade point average of 4.50 or better over all completed major EECS courses. Note: "Major" courses are all EECS courses with second digit other than 5 and include LE/EECS 1028 3.00 (cross-listed to: SC/MATH 1028 3.00) and LE/EECS 1019 3.00 (cross-listed to: SC/MATH 1019 3.00). | | | | |

Participation in the Co-Op Program is highly recommended for all engineering students, but is not a degree requirement.