

# BASC COMPUTER ENGINEERING, ENGINEERING MANAGEMENT AND ENTREPRENEURSHIP OPTION

Building on a solid foundation of traditional engineering skills, this program covers many different aspects of computer software and hardware design, and allows for more specialized studies in microprocessor-based systems, computer architecture, programming concepts, real-time operating systems, software engineering and robotics. This program provides multiple paths to a variety of careers.

This program is offered in English and in French.

All courses are available in English and French. Advanced courses are sometimes offered only in English.

## Program Requirements

Co-operative education is available with this program.

Requirements for this program have been modified. Please consult the 2024-2025 calendars (<http://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

### Compulsory First-Year Courses:

ADM 1100	Introduction to Business	3 Units
ADM 1340	Financial Accounting	3 Units
CHM 1311	Principles of Chemistry	3 Units
GNG 1105	Engineering Mechanics	3 Units
GNG 1106	Fundamentals of Engineering Computation	3 Units
ITI 1100	Digital Systems I	3 Units
ITI 1121	Introduction to Computing II	3 Units
MAT 1320	Calculus I	3 Units
MAT 1322	Calculus II	3 Units
MAT 1341	Introduction to Linear Algebra	3 Units
MAT 1348	Discrete Mathematics for Computing	3 Units
PHY 1124	Fundamentals of Physics for Engineers	3 Units

### Compulsory Second-Year Courses:

ADM 2320	Marketing	3 Units
CEG 2136	Computer Architecture I	3 Units
CSI 2110	Data Structures and Algorithms	3 Units
ELG 2136	Electronics I	3 Units
ELG 2138	Circuit Theory I	3 Units
ELG 2911	Professional Practice in Information Technology and Engineering	3 Units
ENG 1112	Technical Report Writing	3 Units
GNG 2101	Introduction to Product Development for Engineers and Computer Scientists	3 Units
MAT 2322	Calculus III for Engineers	3 Units
MAT 2377	Probability and Statistics for Engineers	3 Units
MAT 2384	Ordinary Differential Equations and Numerical Methods	3 Units
PHY 2323	Electricity and Magnetism	3 Units

SEG 2105	Introduction to Software Engineering	3 Units
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### Compulsory Third-Year Courses:

ADM 3313	New Venture Creation	3 Units
CEG 3136	Computer Architecture II	3 Units
CEG 3155	Digital Systems II	3 Units
CEG 3156	Computer Systems Design	3 Units
CEG 3185	Introduction to Data Communications and Networking	3 Units

CSI 3131	Operating Systems	3 Units
ELG 3125	Signal and System Analysis	3 Units
ELG 3155	Introduction to Control Systems	3 Units

3 course units from: 3 Units

HIS 2129	Technology, Society and Environment Since 1850	
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PHI 2394	Scientific Thought and Social Values	
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SEG 2106	Software Construction	3 Units
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### Compulsory Fourth-Year Courses:

CEG 4136	Computer Architecture III	3 Units
CEG 4166	Real-Time Systems Design	3 Units
CEG 4912	Computer Engineering Design Project I	3 Units
CEG 4913	Computer Engineering Design Project II	3 Units
GNG 4170	Engineering Law	3 Units

3 course units of science electives 3 Units

3 optional course units from the list of optional courses in Engineering Management and Entrepreneurship option 3 Units

6 course units of technical electives from the list of technical electives 6 Units

**Total: 132 Units**

## List of Optional Courses

### List of Electives for the Management and Entrepreneurship Option:

ADM 1101	Business and Society	3 Units
ADM 2336	Organizational Behaviour	3 Units
ADM 3118	International Business	3 Units
ADM 3319	Cross-Cultural Management	3 Units
ADM 3326	Advertising and Sales Promotion Management	3 Units
GNG 4120	Technology Entrepreneurship for Engineers and Computer Scientists	3 Units
GNG 4171	Intellectual Property and Technology Law for Engineers	3 Units
PHI 2397	Business Ethics	3 Units

### List of Technical Electives:

CEG 4112	Topics in Computer Engineering II	3 Units
CEG 4140	Digital Control Systems	3 Units
CEG 4158	Computer Control in Robotics	3 Units
CEG 4186	Wireless Networks	3 Units
CEG 4187	Optical Networks	3 Units
CEG 4188	Higher Layer Network Protocols	3 Units
CEG 4190	Computer Network Design	3 Units
CEG 4195	Applied Machine Learning for Computer Engineering	3 Units

*This is a copy of the 2025-2026 catalog.*

CEG 4198	Distributed Systems Design	3 Units
CEG 4316	Digital Image Processing	3 Units
CEG 4396	Computer Network Management	3 Units
CEG 4399	Design of Secure Computer Systems	3 Units
CSI 2120	Programming Paradigms	3 Units
CSI 2132	Databases I	3 Units
CSI 2372	Advanced Programming Concepts With C++	3 Units
CSI 3120	Programming Language Concepts	3 Units
CSI 3140	WWW Structures, Techniques and Standards	3 Units
CSI 4106	Introduction to Artificial Intelligence	3 Units
ELG 2137	Circuit Theory II	3 Units
ELG 3136	Electronics II	3 Units
ELG 4137	Principles and Applications of VLSI Design	3 Units
ELG 4177	Digital Signal Processing	3 Units
SEG 3102	Software Design and Architecture	3 Units
SEG 3125	Analysis and Design of User Interfaces	3 Units