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 2023-2024 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
ITI 1100	Digital Systems I	3 Units
ITI 1120	Introduction to Computing 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
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

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
ECO 1192	Engineering Economics	
GNG 2101	Introduction to Product Development for Engineers and Computer Scientists	
3 course units from:		3 Units
HIS 2129	Technology, Society and Environment Since 1850	
PHI 2394	Scientific Thought and Social Values	
SEG 2106	Software Construction	3 Units

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 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