

BASC CIVIL ENGINEERING, ENVIRONMENTAL AND WATER RESOURCES OPTION

Civil engineers design the infrastructure on which their communities depend, such as buildings and their foundations, bridges, canals, dams, transportation facilities, municipal sewer and water networks, and wastewater and solid waste treatment systems.

Civil engineering students at the University of Ottawa can take advantage of world-class teaching laboratories, multimedia classrooms and outstanding computer facilities. Students develop expertise in computer applications, field and laboratory testing, and project management, and they are well-equipped to serve their communities upon graduation.

This program is offered in English and in French.

French courses are available in first year and almost all of second year. Most third and fourth year courses are offered in English only.

Learn more about this program (<https://www.uottawa.ca/faculty-engineering/undergraduate-studies/programs/civil-engineering/>)

Program Requirements

Co-operative education is available with this program.

Requirements for this program have been modified. Please consult the 2025-2026 calendars (<https://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

Compulsory First-Year Courses:

CHM 1311	Principles of Chemistry	3 Units
CVG 1107	Civil Engineering Graphics and Seminars	3 Units
ENG 1112	Technical Report Writing	3 Units
GNG 1103	Introduction to Engineering Design	3 Units
GNG 1105	Engineering Mechanics	3 Units
GNG 1106	Fundamentals of Engineering Computation	3 Units
MAT 1320	Calculus I	3 Units
MAT 1322	Calculus II	3 Units
MAT 1341	Introduction to Linear Algebra	3 Units
PHY 1122	Fundamentals of Physics II	3 Units
3 course units from:		3 Units

ECO 1192 Engineering Economics

GNG 2101 Introduction to Product Development for Engineers and Computer Scientists

Compulsory Second-Year Courses:

CVG 2107	Geotechnical Materials and Processes	3 Units
CVG 2116	Introduction to Fluid Mechanics	3 Units
CVG 2132	Fundamentals of Environmental Engineering	3 Units
CVG 2140	Mechanics of Materials I	3 Units
CVG 2141	Civil Engineering Materials	3 Units
CVG 2149	Civil Engineering Mechanics	3 Units
CVG 2171	Surveying and Measurements	3 Units
CVG 2181	Numerical Modelling in Civil Engineering	3 Units
MAT 2322	Calculus III for Engineers	3 Units

MAT 2384 Ordinary Differential Equations and Numerical Methods 3 Units

STA 2391 Probability and Statistics for Engineers 3 Units

3 course units from: 3 Units

HIS 2129 Technology, Society and Environment Since 1850

PHI 2394 Scientific Thought and Social Values

Compulsory Third-Year Courses:

CVG 3106 Soil Mechanics II 3 Units

CVG 3109 Soil Mechanics I 3 Units

CVG 3116 Hydraulics 3 Units

CVG 3120 Hydrology 3 Units

CVG 3132 Physical/Chemical Unit Operation of Water and Wastewater Treatment 3 Units

CVG 3140 Theory of Structures I 3 Units

CVG 3147 Structural Steel Design I 3 Units

CVG 3148 Reinforced Concrete Design I 3 Units

3 course units of science electives 3 Units

Compulsory Fourth-Year Courses:

CVG 4001 Introduction to Civil Engineering Project 3 Units

CVG 4113 Hydraulics of Water Supply and Sewer Systems 3 Units

CVG 4130 Advanced Environmental Engineering 3 Units

CVG 4133 Solid Waste Management 3 Units

CVG 4150 Highway and Transportation Engineering 3 Units

CVG 4175 Field Investigations and Environmental Impact Assessment of Civil Engineering Projects 3 Units

CVG 4907 Civil Engineering Design Project 3 Units

GNG 4170 Engineering Law 3 Units

3 complementary electives course units at the undergraduate level¹ 3 Units

9 course units of technical electives in environmental or water resources engineering 9 Units

Total: 132 Units

List of Optional Courses

Water Resources Electives:

CVG 4110 Hydraulics of Open Channels 3 Units

CVG 4122 Groundwater and Seepage 3 Units

CVG 4186 Special Topics in Water Resources Engineering 3 Units

GEO 3342 Introduction to Hydrogeology 3 Units

GEO 4301 Selected Topics in Earth Sciences 3 Units

MCG 4102 Finite Element Analysis 3 Units

Environmental Engineering Electives:

CHG 4301 Air Pollution Control Processes 3 Units

CHG 4302 Environmental Biotechnology 3 Units

CHG 4385 Adsorption Separations for Environmental Applications 3 Units

CVG 4135 Water Treatment in Northern Communities 3 Units

This is a copy of the 2026-2027 catalog.

CVG 4188	Special Topics in Environmental Engineering	3 Units
GEO 4301	Selected Topics in Earth Sciences	3 Units

Other Electives:

CVG 4180	Special Directed Studies ²	3 Units
CVG 4260	Thesis ²	6 Units

Note(s)

¹ Complementary elective courses at the undergraduate level includes GNG 2101, GNG 4170, and GNG 4120, but excludes all courses offered by the Faculty of Science and the Faculty of Engineering as well as all courses that have a science, mathematics or engineering content. For a complete list of courses please refer to the list of complementary elective courses (<https://www2.uottawa.ca/faculty-engineering/undergraduate-studies/courses-and-course-sequences/complementary-electives/>) on the Faculty of Engineering website

² Permission from Associate Chair is required.