

ENVIRONMENTAL ENGINEERING PROGRAM (ENVE)

School of Engineering, College of Engineering and Physical Sciences

The degradation of the environment is a concern shared by citizens, government agencies, non-governmental agencies and businesses. The Environmental Engineering program offered by the School of Engineering provides graduates with design and engineering skills to minimize and prevent the impact of human activities on water, soil and air systems. Both simple and innovative solutions are part of the tool box. Graduates will also creatively integrate humanistic and social perspectives in their solutions.

Major (Honours Program)

Code	Title	Credits
Semester 1		
CHEM*1040	General Chemistry I	0.50
ENGG*1100	Engineering and Design I	0.75
ENGG*1500	Engineering Analysis	0.50
MATH*1200	Calculus I	0.50
PHYS*1130	Physics with Applications	0.50
Semester 2		
CHEM*1050	General Chemistry II	0.50
CIS*1500	Introduction to Programming	0.50
ENGG*1210	Engineering Mechanics I	0.50
MATH*1210	Calculus II	0.50
PHYS*1010	Introductory Electricity and Magnetism	0.50
Semester 3		
ENGG*2100	Engineering and Design II	0.75
ENGG*2120	Material Science	0.50
ENGG*2130	Introduction to Environmental Engineering	0.50
ENGG*2400	Engineering Systems Analysis	0.50
MATH*2270	Applied Differential Equations	0.50
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
or MICR*2420	Introduction to Microbiology	
Semester 4		
ENGG*2230	Fluid Mechanics	0.50
ENGG*2560	Environmental Engineering Systems	0.50
HIST*1250	Science and Technology in a Global Context	0.50
MATH*2130	Numerical Methods	0.50
STAT*2120	Probability and Statistics for Engineers	0.50
0.50 restricted electives		0.50
Semester 5		
ENGG*3180	Air Quality	0.50
ENGG*3240	Engineering Economics	0.50
ENGG*3260	Thermodynamics	0.50
ENGG*3590	Water Quality	0.50
ENGG*3650	Hydrology	0.50

ENGG*3670	Soil Mechanics	0.50
Semester 6		
ENGG*3100	Engineering and Design III	0.75
ENGG*3220	Groundwater Engineering	0.50
ENGG*3430	Heat and Mass Transfer	0.50
ENGG*3440	Process Control	0.50
ENGG*3470	Mass Transfer Operations	0.50
0.50 restricted electives		0.50
Semester 7		
ENGG*4000	Proposal for Engineering Design IV	0.00
ENGG*4340	Solid and Hazardous Waste Management	0.50
ENGG*4370	Urban Water Systems Design	0.75
1.50 restricted electives		1.50
Semester 8		
ENGG*4130	Environmental Engineering Design IV	1.00
2.00 restricted electives		2.00

Restricted Electives

(see Program Guide for more information)

The Engineering Program requires Environmental Engineering students to complete the following combination of elective credits to complete their program:

- 1.00 credits from the ENVE-1 Environmental Engineering electives
- 2.00 credits from the ENVE-2 Environmental Engineering electives
- 1.50 credits from Complementary Studies electives

Consult the Program Guide for further information on the prerequisite requirements specific to each elective. Students can take a maximum of 1.50 credits at the 1000 level from the above list of electives.

Minor (Honours Program)

Students must be registered in a B.Eng degree program specialization other than Environmental Engineering to apply for a Minor in Environmental Engineering. A Minor in Environmental Engineering consists of at least 5.00 course credits. A maximum of 2.50 course credits taken as part of the Environmental Engineering Minor may also be applied toward the requirements of the B.Eng. Major specialization.

Code	Title	Credits
CHEM*1050	General Chemistry II	0.50
ENGG*2560	Environmental Engineering Systems	0.50
ENGG*3180	Air Quality	0.50
ENGG*3590	Water Quality	0.50
Select at least 2.00 credits from the following:		
BIOC*2580	Introduction to Biochemistry	0.50
CHEM*2700	Organic Chemistry I	0.50
CHEM*3360	Environmental Chemistry and Toxicology	0.50
ENGG*3080	Energy Resources and Technologies	0.50
ENGG*3250	Energy Management and Utilization	0.50
ENGG*3470	Mass Transfer Operations	0.50
ENGG*4070	Life Cycle Assessment for Sustainable Design	0.50
ENGG*4240	Site Remediation	0.50
ENGG*4340	Solid and Hazardous Waste Management	0.50

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ENGG*4510	Assessment and Management of Risk	0.50
ENGG*4760	Biological Wastewater Treatment Design	0.50
ENGG*4770	Physical and Chemical Water and Wastewater Treatment Design	0.50
ENGG*4810	Control of Atmospheric Particulates	0.50
ENGG*4820	Atmospheric Emission Control: Combustion Systems	0.50
ENVS*2030	Meteorology and Climatology	0.50
Select at least 1.00 credits from the following:		
ECON*2100	Economic Growth and Environmental Quality	0.50
EDRD*2650	Introduction to Planning and Environmental Law	0.50
ENVS*2270	Impacts of Climate Change	0.50
GEOG*1220	Human Impact on the Environment	0.50
GEOG*2210	Environment and Resources	0.50
GEOG*3020	Global Environmental Change	0.50
GEOG*3210	Indigenous-Settler Relationships in Environmental Governance	0.50
PHIL*2070	Philosophy of the Environment	0.50
POLS*3370	Environmental Politics and Governance	0.50
SOC*2280	Society, Knowledge Systems and Environment	0.50