

ENVIRONMENTAL PROTECTION TECHNOLOGY (ENVI)

This is a list of the Environmental Protection Technology (ENVI) courses available at KPU.

ENVI 1106 4 Credits

Environmental Chemistry I

Students will study chemistry with a focus on environmental issues and applications. They will study volumetric and gravimetric analysis, general equilibrium reactions, intermolecular forces, basic organic chemistry concepts, and oxidation-reduction reactions relevant to natural and environmental applications.

Prerequisites: One of: CHEQ 1094 (C), Chemistry 11 (C+), Chemistry 12 (C-), AND, One of: MATQ 1093 (C), MATQ1099 (C), MATQ0011 (C), ABEM 0011 (C), MATP 1011 (C), Principles of Mathematics 11 (C), Pre-calculus 11 (C), Foundations of Mathematics 12 (C)

Attributes: QUAN
Not Transferable

ENVI 1121 3 Credits

Environmental Issues

Students will learn to identify the basic scientific and social principles that underlie the main current environmental issues. They will also examine local and global case studies and will study the effects of pollution and resource degradation on society.

Attributes: QUAN

ENVI 1206 4 Credits

Environmental Chemistry II

Students will study chemistry with a focus on environmental issues and applications. They will study gases and phase equilibria as well as key organic chemistry concepts (basic compound families, important reaction types) relevant to environmental applications such as toxicity, persistence, and mobility.

Prerequisites: (ENVI 1106 or CHEM 1110) and (MATH 1117 or [Principles of Mathematics 12 C+] or [Pre-calculus 12 C+])
Transferable (refer to transfer guide)

ENVI 1216 4 Credits

Introduction to Earth Sciences

Students will study the basic principles of geology, hydrogeology, hydrology, and atmospheric science. They will learn the key physical mechanisms that affect the transport and transformation of pollutants released in the environment.

Attributes: QUAN
Transferable (refer to transfer guide)

ENVI 1226 3 Credits

Health & Safety

Students will study the dangers of hazardous materials using standard industrial classification systems and will learn safe emergency response procedures for spill incidents and the use of protective suits and respirators. They will also learn to recognize and control common contaminated sites hazards through the development of site health and safety plans.

Prerequisites: ENVI 1106 or CHEM 1110
Not Transferable

ENVI 2305 3 Credits

Environmental Toxicology

Students will study the principles of toxicology and the toxicological testing of chemicals, with emphasis on environmental pollutants.

Prerequisites: (ENVI 1206 or CHEM 1210) and BIOL 1210
Transferable (refer to transfer guide)

ENVI 2307 4 Credits

Environmental Physics

Students will learn the basic principles of physics that apply to environmental concerns. They will study topics in fluid mechanics and electricity and perform labs that illustrate the physical principles underlying common environmental instrumentation.

Prerequisites: (MATH 1117 or MATH 1112 or [MATH 1111 and 1113] or Principles of Math 12 with a C) and (PHYP 1011 or PHYQ 1098 or Physics 11 with a C)

ENVI 2310 3 Credits

Solid Waste Management

Students will learn the principles of pollution prevention, waste minimization, recycling, landfill operation, incineration, and composting. They will study the basic concepts of environmental management systems and environmental audits.

Attributes: QUAN

ENVI 2315 4 Credits

Water and Soil Sampling

Students will gain experience with the field sampling procedures, instrumentation and analytical methods used in water, soil, and sediment assessment and control.

Prerequisites: ENVI 1106 OR CHEM 1110
Not Transferable

ENVI 2405 3 Credits

Environmental Legislation

Students will study current environmental legislation at the federal, provincial, and municipal levels. They will learn the correct procedures for adhering to current legislation. Students will participate in a project to propose a new legislation or by-law, and will identify and interact with relevant stakeholders.

Prerequisites: ENVI 1121

ENVI 2410 3 Credits

Water Resources Protection

Students will learn the principles of operation of physical, chemical, and biological treatment systems for water and wastewater. They will also learn the principles of flood control, erosion prevention, and other methods of aquatic habitat protection.

Prerequisites: ENVI 1216 and ENVI 2315

ENVI 2415 4 Credits

Air Quality Monitoring

Students will gain experience with comprehensive sampling, instrumentation and analytical techniques used in ambient air and source monitoring, and will learn to apply the scientific principles underlying air monitoring and air quality issues.

Prerequisites: ENVI 1216
Not Transferable

ENVI 2420 **Contaminated Sites Management** **4 Credits**

Students will learn the basic principles of contaminated sites management, including site assessment procedures, remediation methods, and the regulatory framework. They will also study the movement of contaminants in soils and groundwater.

*Prerequisites: (ENVI 1206 or CHEM 1210) and ENVI 1216
Not Transferable*

ENVI 2901 **Environmental Research Seminar** **1 Credits**

Students will discuss the scope of research projects in environmental protection in the context of their relevance to the environmental industry and needs of society. They will make a preliminary research project selection, discuss how to carry it out, and provide feedback to their classmates on their proposed research.

*Prerequisites: (ENVI 1106 or CHEM 1110) and ENVI 2315
Co-requisites: MATH 1115 MATH 1115
Not Transferable*

ENVI 2902 **Environmental Research Project** **2 Credits**

Students will engage in an intensive study of a selected topic in environmental protection technology. They will select a research topic, collect and interpret data, write a report on the results of the project, and present their results.

*Prerequisites: ENVI 2901 and MATH 1115
Not Transferable*

ENVI 3112 **Environment and Society** **3 Credits**

Students will analyze environmental issues within their social contexts. They will examine the origins of public perception of environmental issues, including the role of the media, activists, whistle-blowers, and the artistic community. Students will debate the respective importance of science and public perception in influencing government policy in selected case studies

Prerequisites: 60 credits of 1100-level or higher courses

ENVI 3212 **The Urban Environment** **3 Credits**

Students will analyze environmental issues within the contexts of community projects. They will conduct a local project, from initial fact-finding and community liaison to formal proposal, and will quantify its potential impacts using local case studies as a guide.

Prerequisites: 60 credits of 1100-level or higher courses

ENVI 4501 **Special Topics in Sustainability** **3 Credits**

Students will engage in an intensive study of a selected topic in sustainability, as determined by the instructor. They will review relevant literature, develop a research proposal, write a comprehensive report, and present the results of their research.

Note: the topic of study will be established in advance by the department. Please check with the department for proposed offerings. Students may take this course multiple times for further credit on different topics.

*Prerequisites: Permission of instructor
Transferable (refer to transfer guide)*

ENVI 4599 **Directed Studies** **3 Credits**

Students will carry out a detailed investigation of an environmental or sustainability topic consisting of readings and research, under the supervision of a faculty member with expertise in the area. They will identify relevant sources of information and develop a comprehensive understanding of their topic, in addition to submitting a final report. They may perform laboratory or field work as part of their research. Note: Students may take this course multiple times for further credit on different topics.

*Prerequisites: Permission of instructor
Not Transferable*