

# ENVIRONMENTAL PROTECTION TECHNOLOGY (ENVI)

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

## ENVI 1106 CR-4

### Environmental Chemistry I

Students will study chemistry with a focus on environmental issues and applications. They will study concentration units, volumetric and gravimetric analysis, gases and organic chemistry with applications relevant to environmental issues.

*Prerequisites:* (CHEQ 1094 or Chemistry 11 [C+] or Chemistry 12 [P]) and (MATQ 1093 or ABEM 0011 or MATP 1011 or Principles of Mathematics 11 or Pre-calculus 11) or Foundations of Mathematics 12

*Co-requisites:* MATH 1117 MATH 1117

*Not Transferable*

## ENVI 1121 CR-3

### 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 CR-4

### Environmental Chemistry II

Students will study chemistry with a focus on environmental issues and applications. They will study oxidation-reduction reactions, general equilibria (with applications to electrochemistry, solubility, and acids and bases), and intermolecular forces (with applications to miscibility and boiling/freezing points), with focus on environmental applications.

*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 CR-4

### 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.

*Prerequisites:* ENVI 1121

*Attributes:* QUAN

*Transferable (refer to transfer guide)*

## ENVI 1226 CR-3

### 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 CR-3

### 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 CR-4

### 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 CR-3

### 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.

*Prerequisites:* ENVI 1121

*Attributes:* QUAN

## ENVI 2315 CR-4

### 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 1121 and (ENVI 1106 OR CHEM 1110)

*Not Transferable*

## ENVI 2405 CR-3

### 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 case study, and will identify stakeholders and relevant legislation and regulations.

## ENVI 2410 CR-3

### 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 protection.

*Prerequisites:* ENVI 1216 and ENVI 2307 and ENVI 2315

## ENVI 2415 CR-4

### 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 and ENVI 2307

*Not Transferable*

**ENVI 2420 CR-4****Contaminated Sites Management**

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 2426 CR-3.5****Health and Safety**

Students will study the dangers of hazardous materials through WHMIS and Transportation of Dangerous Goods 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 1206 or CHEM 1210) and ENVI 2305*

**ENVI 2900 CR-3****Research Project**

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

**ENVI 2901 CR-1****Environmental Research Seminar**

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 CR-2****Environmental Research Project**

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 CR-3****Environment and Society**

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 CR-3****The Urban Environment**

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 CR-3****Special Topics in Sustainability**

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 CR-3****Directed Studies**

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*