



Introduction to Environmental Chemistry – CHEM 100

University Studies Program

Course Outline

COURSE IMPLEMENTATION DATE: September 2009
OUTLINE EFFECTIVE DATE: September 2019
COURSE OUTLINE REVIEW DATE: March 2024

GENERAL COURSE DESCRIPTION:

This course is an introduction to the fields of environmental studies and environmental chemistry. Qualitative and quantitative aspects of environmental processes are studied. Topics include atmospheric processes (including those involving carbon dioxide and ozone), air pollution, acid rain, natural waters, dissolved oxygen and the fate of chemical compounds in the environment. Where possible, examples involving local issues and current events are studied.

Program Information: This course is a one-semester course containing both lecture and laboratory components, and is designed for non-science majors. It is a required course for the Environmental Studies Certificate, a laboratory-science elective for the Teacher Education Program, and is an elective course for other Arts majors with an interest in environmental issues. This course can also be used as an elective in the Bachelor of Business Administration Degree Program.

Note: CHEM 100 does not meet the requirements for a science major and therefore cannot be substituted for CHEM 101 or CHEM 102.

Delivery: This course is delivered face-to-face.

COTR Credits: 3

Hours for this course: 90 hours

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	45
Seminars / Tutorials	
Laboratory / Studio Hours	45
Practicum / Field Experience Hours	
Other Contact Hours	
Total	90

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Course Outline Author or Contact:

David G. Dick, BSc, PhD

Signature

APPROVAL SIGNATURES:

Department Head
Erin Aasland Hall
E-mail: aaslandhall@cotr.bc.ca

Dean of Business and University Studies
Darrell Bethune
E-mail: bethune@cotr.bc.ca

Department Head Signature

Dean Signature

EDCO

Valid from: September 2019 – March 2024

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT:**Prerequisites:** None**Corequisites:** None**Flexible Assessment (FA):**

Credit can be awarded for this course through FA

 Yes No**Transfer Credit:** For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>

Students should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Freeman, B., Environmental Science – A Canadian Perspective. 5th ed. Canada: Pearson.

Please see the instructor's syllabus or check COTR's online text calculator
<http://go.cotr.bc.ca/tuition/tCalc.asp> for a complete list of the currently required textbooks.

LEARNING OUTCOMES:

Upon the successful completion of this course, students will be able to

- evaluate differing opinions of contemporary environmental issues;
- apply a basic knowledge of chemistry to understand environmental processes;
- recognize the sources and sinks of important chemical species;
- apply knowledge of kinetics to evaluate transport phenomena;
- apply chemical knowledge and critical thinking skills to integrate knowledge gained in other courses and support learning in future courses;
- recall laboratory procedures and the names and uses of laboratory equipment to allow the safe and efficient performance of a variety of chemical experiments; and
- make use of careful measurement techniques and correct handling of data to solve typical problems of environmental importance.

This course should help students to

- use written and oral communication skills effectively, employing methods appropriate to message and content;
- think clearly and critically, fusing experience, knowledge and reasoning into considered judgment;
- identify, interpret and solve problems, effectively implementing and evaluating proposed strategies;
- set goals and priorities in academic and personal life;
- set high performance standards;
- demonstrate initiative, motivation and persistence to get the job done;
- comprehend and interpret scientific and/or technical information from text;
- critically evaluate information for accuracy, relevance and importance;
- make generalizations (transfer knowledge and training to new situations);
- apply a variety of mathematical techniques with the degree of accuracy required to solve problems and make decisions;
- work effectively with others in a laboratory situation;
- use equipment requiring careful procedures; and
- draw reasonable conclusions from observations.

COURSE TOPICS:

- Stratospheric Ozone and the Processes that Lead to Its Formation and Destruction
- Carbon Dioxide and Other Gases Associated with Global Warming
- Sources and Effects of Various Air Pollutants
- Water and Its Role in the Transportation and Transformation of Chemical Species
- Water Pollution and Water Treatment
- The Roles of Nitrogen and Phosphorus in Soils

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

EVALUATION AND ASSESSMENT:

Assignments	% Of Total Grade
Assignments	10%
Midterms	35%
Final Exam	30%
Laboratory Reports	<u>25%</u>
Total	100%

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.