ENVH12003 *Environmental Toxicology*
Term 2 - 2017

Profile information current as at 29/04/2024 12:12 pm

General Information

Overview

Environmental toxicology is the study of the nature, properties, effects and detection of toxic substances in diverse environments and those exposed. This unit provides an introduction to basic toxicology for students in public health disciplines and focuses on developing an understanding of the principles and concepts relating to environmental exposures. Topics that will be covered include routes of exposure, the concept of dose, dose-response relationships, absorption and distribution of toxicants, biotransformation and elimination, target organ toxicity, carcinogenesis, mutagenesis, teratogenesis and risk assessment. The unit will examine toxins of interest within community and occupational contexts and how they are tested and regulated. Case studies and special topics will be critically reviewed.

Details

Career Level: *Undergraduate*
Unit Level: *Level 2*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Prerequisites: 48 credit points AND SCIE11022 OR CHEM11041
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2017

- Distance

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Quiz(zes)**
Weighting: 20%
2. **Written Assessment**
Weighting: 40%
3. **Examination**
Weighting: 40%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Course evaluation

Feedback

Too many assessment tasks; two major assessment tasks in the later part of the term.

Recommendation

Assessment tasks have been broken up to reduce the amount of content covered for each task and to effectively assess the student against the course learning outcomes. Quizzes are small, and are designed as formative tasks to prepare students for the exam, as well as assessing specific learning outcomes. Unfortunately, there is no alternative to the two major assessment tasks that occur toward the end of term, as these tasks are designed to assess the application of a body of knowledge gained throughout the term.

Feedback from Course evaluation.

Feedback

More interaction from lecturer necessary.

Recommendation

Students are provided with weekly recorded lectures and weekly announcements on the Latest News forum. Emails were sent out after both quizzes to each individual student. Regular Collaborate tutorials were offered but rarely taken up by students. Students posted rarely to online forums, despite encouragement to do so. Students who engage in the course environment receive one on one and interaction with the lecturer, but the lecturer can only interact with student who wish to engage. Weekly recorded lectures and announcements and regular Collaborate tutes will continue to be offered. Forum posts will be responded to promptly. Additional interaction with the lecturer will only occur with students who are prepared to engage. This should be outlined more clearly early in the term in future offerings.

Feedback from Course evaluation

Feedback

One student suggested a residential element for the course to meet other flex students.

Recommendation

This course is operated by distance only and would require all students to attend in a term where there are other required residential schools. Unfortunately, it is not feasible to run an additional residential school for social purposes.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Define fundamental toxicological concepts.
2. Identify and classify a range of common toxins and their environmental sources.
3. Explain the dose response relationship and its implications and applications.
4. Describe fundamental processes and endpoints relating to toxins within the human body.
5. Apply the principles of risk assessment and risk management to toxicological situations.
6. Discuss major issues in environmental toxicology relating to exposures from natural and anthropogenic sources.
7. Critically consider the ethical and regulatory implications of toxicological research, associated uncertainties and risk communication.

Bachelor of Environmental Health
Foundation and applied environmental toxicology (LOs 1, 2, 3, 4 & 6) are identified as underpinning skills and knowledge in Part 2 of the the Environmental Health Australia Skills & Knowledge Matrix, used as the basis for accreditation of the Bachelor of Environmental Health course. Methods of risk assessment and management (including as applied to toxicological issues) (LO 5) and the use of evidence in regulatory practice (LO7) are also identified as underpinning knowledge. Additionally, toxicology is an integral part of many of the activity-specific skills and knowledge identified in Part 3 of the Matrix.
Bachelor of Occupational Health & Safety
An understanding of toxicology is also vital to support studies in Occupational Hygiene, considered a core knowledge area in the Safety Institute of Australia's Body of Knowledge, proposed to be used for accreditation of OHS courses within Australia.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Online Quiz(zes) - 20%	•	•	•				
2 - Written Assessment - 40%					•	•	•
3 - Examination - 40%	•	•	•	•			

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Communication	•	•	•	•		•	•
2 - Problem Solving		•	•	•	•		•
3 - Critical Thinking	•	•	•	•	•	•	•
4 - Information Literacy		•	•	•	•	•	•

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
5 - Team Work							
6 - Information Technology Competence							
7 - Cross Cultural Competence						•	•
8 - Ethical practice					•	•	•
9 - Social Innovation							
10 - Aboriginal and Torres Strait Islander Cultures							

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Online Quiz(zes) - 20%	•		•	•						
2 - Written Assessment - 40%	•	•	•	•			•	•		
3 - Examination - 40%	•	•	•							

Textbooks and Resources

Textbooks

ENVH12003

Prescribed

A Textbook of Modern Toxicology
Edition: 4th (2010)
Authors: Hodgson, Ernest
Wiley
Hoboken , New Jersey , USA
ISBN: 978-0-470-46206-5
Binding: Hardcover

Additional Textbook Information
The textbook is also available as an e-book in PDF or epub format from the publisher at http://au.wiley.com/WileyCDA/WileyTitle/productCd-047046206X.html

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Lisa Bricknell Unit Coordinator
l.bricknell@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Introduction to environmental toxicology Exposure settings	Chapter 1 Chapter 3	

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Classifying toxicants by use	Chapter 4	

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Toxicokinetics and biotransformation	Chapter 5	

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Toxic action- Acute toxicity	Chapter 10	Quiz 1A opens 9:00am Monday

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Chronic toxicity- carcinogens, mutagens and teratogens	Chapters 11 & 12	**Quiz 1A closes 9:00am Monday**

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 21 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Target organs and systems	Chapters 13 & 14	

Week 7 - 28 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Target organs and systems cont'd	Chapters 16 & 18	

Week 8 - 04 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Risk assessment	Chapters 20 & 23	Quiz 1B opens 9:00am Monday

Week 9 - 11 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Toxicants in the environment	Chapter 25	**Quiz 1B closes 9:00am Monday**

Week 10 - 18 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic

Toxicants in the environment- cont'd	Chapter 27	

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Regulation and ethics	Chapter 22	

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Future considerations	Chapter 29	**Report** Due: Week 12 Friday (6 Oct 2017) 11:45 pm AEST

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
Exam preparation		

Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
		Final examination

Assessment Tasks

1 Online Quiz(zes)

Assessment Type
Online Quiz(zes)

Task Description

- The quizzes will become available at 9:00am on the Monday of Weeks 4 and 8 and remain open until 9:00am on the following Monday.
- There is no time limit to complete the quiz and you can save your quiz and return to it later (while the quiz is available)
- You will get your final result from the quiz showing which questions you got right or wrong. This will let you know what areas you need to study/revise.
- You should choose the most correct answer.

Number of Quizzes
2

Frequency of Quizzes
Other

Assessment Due Date

9:00am Monday Week 5 and 9:00am Monday Week 9.

Return Date to Students

After each quiz has closed.

Weighting
20%

Assessment Criteria
Quiz 1A will assess the student's knowledge of general principles of toxicology, the different types and classes of toxins and basic toxicokinetics.
Quiz 1B will assess the student's knowledge of toxic actions, endpoints and organ/system toxicity.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Define fundamental toxicological concepts.
- Identify and classify a range of common toxins and their environmental sources.
- Explain the dose response relationship and its implications and applications.

Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy

2 Report

Assessment Type
Written Assessment

Task Description
As an environmental toxicologist, you have been asked to provide an opinion and recommendations on the safety and benefits of the addition of fluoride to public drinking water supplies. In your response, you should include:

- a review of the literature relating to the addition of fluoride to public drinking water supplies, including a summary of:
    - the active substance
    - mechanisms of exposure
    - acute measures of toxicity, NOAEL, dose response, etc.
    - toxicokinetics, biotransformation, target organs and endpoints
    - evidence from research in the field
- a discussion of the risks, benefits and concerns about potable water fluoridation
- your considered opinion, based on the evidence you have reviewed
- your recommendation for action

Length: 3000 words (10% under- 20% over is acceptable).
As with any report, you should use appropriate evidence to support your statements. There is no prescribed format for this task but your report should use relevant headings and subheadings to guide the reader. A Table of Contents and Executive Summary is not required.

Assessment Due Date
Week 12 Friday (6 Oct 2017) 11:45 pm AEST

Return Date to Students
Exam Week Friday (20 Oct 2017)

Weighting
40%

Minimum mark or grade
. You must achieve a passing grade for this item and an overall composite grade of 50% to be eligible to pass the course.

Assessment Criteria
This assessment task will be assessed according to the following criteria:
Relevance (30%)

- summarises relevant toxicological information from credible and reputable sources
- report is relevant to the topic of fluoride in potable water supplies
- makes appropriate connections between evidence, opinion and recommendations
- uses appropriate methodology to consider risks

Validity (40%)

- depth and extent of discussion of the evidence presented
- accuracy of the application of evidence to opinion and recommendations
- opinion and recommendations have been based on critical thought, analysis of the evidence and synthesis of new ideas
- depth and range of evidence

Organisation (20%)

- quality of consideration of the required components- attention paid to toxicological information, health effects, endpoints etc, opinion is clearly expressed, recommendations are reasonable
- structure and flow of information

- coherence and clarity of expression (spelling, grammar, syntax)

Presentation (10%)

- style and formatting of report
- typographical matters (types, font etc)
- referencing is consistent and in accordance with Harvard style
- length

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Apply the principles of risk assessment and risk management to toxicological situations.
- Discuss major issues in environmental toxicology relating to exposures from natural and anthropogenic sources.
- Critically consider the ethical and regulatory implications of toxicological research, associated uncertainties and risk communication.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Cross Cultural Competence
- Ethical practice

Examination

Outline
Complete an invigilated examination.

Date
During the examination period at a CQUniversity examination centre.

Weighting
40%

Length
180 minutes

Minimum mark or grade
50%

Exam Conditions
Closed Book.

Materials
Calculator - all non-communicable calculators, including scientific, programmable and graphics calculators are authorised
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem