



ENVH12003 *Environmental Toxicology*

Term 2 - 2019

Profile information current as at 20/04/2024 02:03 am

All details in this unit profile for ENVH12003 have been officially approved by CQU University and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

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 - 2019

- Online

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 Student extension requests, informal feedback during tutorials.

Feedback

A significant proportion of the class requested short extensions on the final assessment task, stating that the workload from other units was impacting on completing it on time.

Recommendation

Due date for Assessment Task 2 be moved back to Week 12.

Feedback from Unit evaluation (1 response); evaluations from previous years; personal reflection.

Feedback

Textbook difficult to read.

Recommendation

New textbook more specifically relevant to public health be considered for future terms.

Feedback from Unit evaluation (1 response)

Feedback

EnHealth Risk Assessment process difficult to grasp.

Recommendation

Break down existing tutorial over two weeks to reduce the amount of learning required from a single tute.

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



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 | | | • | • | • | • | • | • |
| 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

[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 - 15 Jul 2019

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

Week 2 - 22 Jul 2019

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

Week 3 - 29 Jul 2019

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

Week 4 - 05 Aug 2019

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

Week 5 - 12 Aug 2019

| Module/Topic | Chapter | Events and Submissions/Topic |
|--------------|---------|------------------------------|
|--------------|---------|------------------------------|

Chronic toxicity- carcinogens, mutagens and teratogens

Chapters 11 & 12

Quiz 1A closes 9:00am Monday

Vacation Week - 19 Aug 2019

Module/Topic

Chapter

Events and Submissions/Topic

Week 6 - 26 Aug 2019

Module/Topic

Chapter

Events and Submissions/Topic

Target organs and systems

Chapters 13 & 14

Week 7 - 02 Sep 2019

Module/Topic

Chapter

Events and Submissions/Topic

Target organs and systems cont'd

Chapters 16 & 18

Week 8 - 09 Sep 2019

Module/Topic

Chapter

Events and Submissions/Topic

Risk assessment

Chapters 20 & 23

Quiz 1B opens 9:00am Monday

Week 9 - 16 Sep 2019

Module/Topic

Chapter

Events and Submissions/Topic

Toxicants in the environment

Chapter 25

Quiz 1B closes 9:00am Monday

Week 10 - 23 Sep 2019

Module/Topic

Chapter

Events and Submissions/Topic

Toxicants in the environment- cont'd

Chapter 27

Week 11 - 30 Sep 2019

Module/Topic

Chapter

Events and Submissions/Topic

Regulation and ethics

Chapter 22

Week 12 - 07 Oct 2019

Module/Topic

Chapter

Events and Submissions/Topic

Future considerations

Chapter 29

Review/Exam Week - 14 Oct 2019

Module/Topic

Chapter

Events and Submissions/Topic

Exam preparation

Report Due: Review/Exam Week Monday (14 Oct 2019) 11:45 pm AEST

Exam Week - 21 Oct 2019

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

Review/Exam Week Monday (14 Oct 2019) 11:45 pm AEST

Return Date to Students

Following certification of grades.

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 assess risks

Validity (40%)

- depth and extent of discussion of the evidence presented
- accuracy of the application of evidence to opinion and recommendations
- draws appropriate conclusions from assessment of risks
- 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

120 minutes

Minimum mark or grade

50%

Exam Conditions

Closed Book.

Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

Calculator - all non-communicable calculators, including scientific, programmable and graphics calculators are authorised

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