NATS 2031 TOXICOLOGY

Credit Points 10

Legacy Code 300877

Coordinator Maggie Davidson (https://directory.westernsydney.edu.au/search/name/Maggie Davidson/)

Description Toxicology is the study of toxicants or poisonous substances: their nature, effects on the human body, and on human, animal and plant populations. Poisonous substances have been used by humans from antiquity for both beneficial and malevolent purposes and today a vast array of toxic industrial chemicals are produced. Both accidental (workplace and environmental) and intentional (forensic) exposure are covered, in terms of group properties, chronic and acute, toxicity, exposure potential, health impact and intervention are presented through forensic case studies. Students carry out a toxicology audit of an operation or premises of their choice.

School Science

Discipline Pharmacology

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Equivalent Subjects NATS 2030 - Toxicology

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe groupings of toxic substances based on their chemical or physiological properties, and identify the most important substances within each group.
2. Compare and contrast the chemistry and pathophysiology of selected substances.
3. Describe the issues in workplace exposures to selected toxic substances in workplace, residential and recreational environments.
4. Describe the origin, impact and management of selected toxic substances in the environment and workplace.
5. Interpret forensic poisonings (both personal and environmental) in terms of health outcomes, motives, opportunities, means and forensic detection, using a range of relevant case histories.
6. Discuss case studies and draw conclusions with relevance to current Australian settings and circumstances.
7. Undertake a toxicology audit of a selected operation or activity of interest or importance to the student, including associated substances, identification of those presenting the greatest hazard under pertaining conditions, description of the chemistry and pathophysiology of those substances, and propose targeted recommendations for risk reduction.
8. Write a scientifically-accountable report describing findings in terms of the audit with targeted and well-reasoned recommendations for risk reduction.

Subject Content

1. Essential toxicological concepts
2. Metals and metalloid salts
3. Organic solvents and petroleum distillates
4. Food toxins and pesticides
5. Gases and air pollutants
6. Particulates and fibres
7. Corrosives
8. Carcinogens, mutagens and teratogens (agents of birth defects)
9. Poisons of war and bioterrorism
10. Exposure routes, forensic testing and forensic case studies
11. Professional auditing of toxic substances

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/ Group Task
Assignment 1	2000 words	30	N	Individual
Assignment 2	2000 words	30	N	Individual
Toxicology Audit: applied toxicology	1600 words, excluding references and appendices (eg: chemical lists)	40	N	Individual

Prescribed Texts

- Casarett & Doull (2007); Toxicology: The basic science of poisons 7th Edition [available online]

Teaching Periods

Spring

Online

Online

Subject Contact Maggie Davidson (https://directory.westernsydney.edu.au/search/name/Maggie Davidson/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS2031_22-SPR_ON_O#subjects)