

NATS 7030 GENERAL TOXICOLOGY

Credit Points 10

Legacy Code 301135

Coordinator Mark Williams ([https://directory.westernsydney.edu.au/search/name/Mark Williams/](https://directory.westernsydney.edu.au/search/name/Mark%20Williams/))

Description This subject, which is primarily book-based, is structured to comprehensively provide the student with the fundamental concepts of toxicology as they relate to specific organ and tissue systems. We aim to supplement this information with online study guides, detailed module objectives and critical thinking exercises. The objective of this subject is to familiarize students with the procedures for using WWW resources for communication and educational purposes and to introduce students to the principles, concepts and terminology utilized in the field of toxicology. This subject is taught by the University of Florida as part of a collaborative venture between the University of Florida and Western Sydney University. Note: Further information on this subject is available from the University of Florida.

School Science

Discipline Forensic Science

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in 3741 Master of Forensic Science, 3742 Graduate Diploma in Forensic Science or 3743 Graduate Certificate in Forensic Science.

Learning Outcomes

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

1. Understand the general principles of toxicology
2. Understand the scientific principles of absorption, distribution and metabolism
3. Understand the principles and concepts of mutagenesis and chemical carcinogenicity
4. Understand the principles and concepts related to reproductive and developmental toxicology
5. Understand the principles of Immunotoxicology, including the biology of the immune response, types of immune reactions and disorders, clinical and laboratory tests used in detecting immunotoxicity and knowledge of specific chemicals that adversely affect the immune system
6. Understand the principles and concepts of neurotoxicity; have knowledge of agents that affect neuronal and synaptic transmission and appropriate neurotoxicity evaluation methods
7. Understand the anatomy and physiology of the lungs, liver, and kidneys, and the mechanisms of related organ toxicity, as well as evaluation methods of organ damage by toxic agents
8. Understand the principles and concepts behind chemically-induced toxicity of the blood
9. Understand the basic principles of risk assessment applications
10. Be able to use internet resources for communication and education purposes

Subject Content

- Module 1 Principles of Toxicology
- Module 2 Xenobiotic Absorption, Distribution, Metabolism, and Elimination
- Module 3 Toxicokinetics
- Module 4 Toxicity of the Hematopoietic System
- Module 5 Hepatotoxicity
- Module 6 Nephrotoxicity
- Module 7 Neurotoxicity
- Module 8 Dermatotoxicity
- Module 9 Pulmonotoxicity
- Module 10 Immunotoxicity
- Module 11 Reproductive and Developmental Toxicity
- Module 12 Mutagenesis and Genetic Toxicology
- Module 13 Chemical Carcinogenesis
- Module 14 Epidemiological Issues
- Module 15 Human Health Risk Assessment

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.

Type	Length	Percent	Threshold	Individual/ Group Task
Final Exam	Not specified	100	N	Individual

Prescribed Texts

- Principles of Toxicology. Environmental and Industrial Applications, Third Edition. Author: S.M. Roberts, R.C. James, Phillip L. Williams. Publisher: John Wiley & Sons (2015) ISBN: 978-0-470-90791-7

Teaching Periods

Uni of Florida/Canberra-Term 1 (2022)

Online

Online

Subject Contact Chris Lennard ([https://directory.westernsydney.edu.au/search/name/Chris Lennard/](https://directory.westernsydney.edu.au/search/name/Chris%20Lennard/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7030_22-FT1_ON_O#subjects)

Uni of Florida/Canberra-Term 3 (2022)

Online

Online

Subject Contact Chris Lennard ([https://directory.westernsydney.edu.au/search/name/Chris Lennard/](https://directory.westernsydney.edu.au/search/name/Chris%20Lennard/))

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Florida Term 1 (2023)

Online

Online

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Florida Term 3 (2023)

Online

Online

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