

# NATS 7030 GENERAL TOXICOLOGY

**Credit Points** 10

**Legacy Code** 301135

**Coordinator** Ricky Spencer ([https://directory.westernsydney.edu.au/search/name/Ricky Spencer/](https://directory.westernsydney.edu.au/search/name/Ricky%20Spencer/))

**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

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**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	Mandatory
Final Exam	Not specified	100	N	Individual	N

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 - Term 1 (2025)

### Online

#### Online

**Subject Contact** Ricky Spencer ([https://directory.westernsydney.edu.au/search/name/Ricky Spencer/](https://directory.westernsydney.edu.au/search/name/Ricky%20Spencer/))

View timetable ([https://classregistration.westernsydney.edu.au/odd/timetable/?subject\\_code=NATS7030\\_25-FT1\\_ON\\_2#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS7030_25-FT1_ON_2#subjects))

## Uni of Florida - Term 3 (2025)

### Online

#### Online

**Subject Contact** Ricky Spencer ([https://directory.westernsydney.edu.au/search/name/Ricky Spencer/](https://directory.westernsydney.edu.au/search/name/Ricky%20Spencer/))

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