

# NATS 7048 TOXIC SUBSTANCES

**Credit Points** 10

**Legacy Code** 301138

**Coordinator** Chris Lennard (<https://directory.westernsydney.edu.au/search/name/Chris Lennard/>)

**Description** This unit, which is primarily book-based, will 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 using online journal articles. The objective of this unit is to familiarize students with many of the most important toxic substances, their toxic effects, and ways to treat poisoned patients. Several example toxicants are presented and discussed in detail. There are literally tens of thousands of chemicals in commerce, and nature offers even greater numbers of chemicals to which individuals are exposed. According to the basic tenets of toxicology, any of these substances in sufficient doses is toxic, although some clearly are of greater health concern than others. The objective of this unit is to provide the student with information on the toxic properties of selected chemicals to illustrate principles regarding mechanisms of toxicity, the array of signs and symptoms associated with intoxication, approaches to clinical assessment of poisoning, and methods of treatment. Examples have been selected from several chemical classes and include agents that may be encountered occupationally, environmentally, in medicine, or in the context of substance abuse. This unit 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 unit 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

**Pre-requisite(s)** NATS 7030

## 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. Comfortably navigate the WWW and know how to locate and use web-based resources for their interest and further education
2. Understand the nature of acute, chronic, immediate and delayed symptoms of poisoning from drugs and chemicals
3. Understand the mechanisms by which the example drugs and chemicals produce toxic effects
4. Understand the use of laboratory tests to assist in the diagnosis and management of poisoned patients
5. Understand the circumstances in which individuals are typically poisoned with these agents
6. Understand the general approach to the treatment of chemical intoxication

7. Understand specific treatments available for the example toxicants and the mechanisms by which these treatments are effective
8. Use web based tools for communication and for the education of themselves and others

## Subject Content

Module 1 Principles of Managing the Poisoned Patient  
 Module 2 Carbon Monoxide  
 Module 3 Cyanide and Hydrogen Sulfide  
 Module 4 Acetaminophen  
 Module 5 Salicylates  
 Module 6 Opioids  
 Module 7 Cocaine  
 Module 8 Amphetamines  
 Module 9 Ethanol  
 Module 10 Arsenic  
 Module 11 Lead  
 Module 12 Mercury  
 Module 13 Organophosphate Pesticides  
 Module 14 Hydrocarbons  
 Module 15 Envenomation: Snakes and Other Reptiles

## 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
Final Exam	Not specified	100	N	Individual

Prescribed Texts

- Goldfrank's Toxicologic Emergencies Authors: Robert Hoffman, Mary Ann Howland, Neal Lewin, Lewis Nelson, and Lewis Goldfrank. Publishing: McGraw-Hill Professional; 10th edition (2014) ISBN-10: 0071801847 ISBN-13 978-0071801843

Teaching Periods

## Uni of Florida/Canberra-Term 1

### Online

#### Online

**Subject Contact** Chris Lennard (<https://directory.westernsydney.edu.au/search/name/Chris Lennard/>)

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=NATS7048\\_22-FT1\\_ON\\_O#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7048_22-FT1_ON_O#subjects))

## Uni of Florida/Canberra-Term 2

### Online

#### Online

**Subject Contact** Chris Lennard (<https://directory.westernsydney.edu.au/search/name/Chris Lennard/>)

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=NATS7048\\_22-FT2\\_ON\\_O#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS7048_22-FT2_ON_O#subjects))