

# NATS 2008 CLINICAL PHARMACOLOGY

**Credit Points** 10

**Legacy Code** 400981

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

**Description** This unit explores in depth clinical pharmacology fundamental to the practice of allied health (Physiotherapy, Podiatric Medicine and Paramedicine) and complementary medicine (Traditional Chinese Medicine). General principles of pharmacology, pharmacokinetics and pharmacodynamics will be discussed. Key drug categories affecting the main body systems will be introduced in terms of their mechanisms of action, adverse reactions and clinical applications. In the context of antimicrobial pharmacology, general concepts of microbiology will be introduced offering students an understanding of the causative microorganisms, the complex relationship between host and pathogen, the pharmacological actions of antimicrobial drugs and the principles of infection control.

**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/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 2 subject

**Pre-requisite(s)** NATS 2038

**Equivalent Subjects** LGYA 7037 - Clinical Pharmacology and Microbiology

**Incompatible Subjects** NATS 2026 - Pharmacology

## Learning Outcomes

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

1. discuss basic pharmacological concepts and ethical and legal requirements of pharmacotherapy in health settings
2. explain the principles of pharmacokinetics and pharmacodynamics
3. describe major types of drugs in each drug category
4. explain the mechanism of actions, adverse reactions and clinical applications of each drug category
5. describe the structure, function, classification, growth of microorganisms and their roles in health and disease
6. explain the principles of immunological response to infections and apply microbiology theory to the infection control
7. explain the principles of drug interactions and toxicity
8. discuss the clinical implications of drug usage and its impact on clinical practice

## Subject Content

1. Introduction to pharmacology
  - drug nomenclature and Classification
  - drug formulations and administration
  - drug development, evaluation and safety
  - legal and Ethical Issues relating to pharmacotherapy
2. Pharmacokinetics

- drug absorption, Distribution, metabolism and Excretion
3. Pharmacodynamics
    - mechanisms of drug action
  4. Drug affecting central nervous system
    - drugs used for anxiety and Depression
    - Drugs used for Parkinson's disease
    - Anticonvulsants, antispasmodics and muscle relaxants
    - drugs used for multiple Sclerosis
  5. Drugs affecting peripheral nervous system
    - drugs affecting adrenergic transmission
    - drugs affecting cholinergic transmission
    - drugs affecting Neuromuscular transmission
  6. Drugs affecting cardiovascular system
    - Thrombolytic and anticoagulant drugs
    - Lipid lowering drugs
    - drugs used in angina
    - Antiarrhythmic drugs
    - Antihypertensive drugs
  7. Drugs affecting respiratory system
    - drugs used for Asthma
    - drugs used for COPD and emphysema
    - drug used for Cough
  8. Drugs used for diabetes
    - Hypoglycaemic drugs
    - insulin
    - treatment of diabetic neuropathy
  9. Drugs affecting gastrointestinal system
    - drugs used for peptic ulcer disease
    - drugs used for Constipation and Diarrhoea
    - drugs used for nausea and Vomiting
  10. Drugs affecting urinary system
    - Diuretics
    - drugs for Urinary incontinence
  11. Drugs for pain and inflammation
    - Opioids
    - Nonsteroidal Anti-Inflammatory drugs
    - Corticosteroids and antirheumatic drugs
  12. Antimicrobial drugs and infection control
    - introduction to microbiology
    - Bacteriology
    - Mycology
    - Virology
    - infection, spread of infection and infection control
    - mechanism of action of antimicrobial chemotherapy
    - antibiotics and synthetic antibacterial drugs
    - Antiviral drugs
  13. Drug interactions and toxicity
    - mechanisms of drug toxicity
    - principles of drug interactions
  14. Clinical implications of drug usage (including children and the elderly) on clinical practice of physiotherapy, podiatry and TCM

## 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
Tutorial Class Participation	Weeks 1-7 and Weeks 10-12	10	N	Group
Intra-session exam	90 mins	30	N	Individual

Essay	2000 words	20	N	Individual
Final Exam	90 mins	30	N	Individual
Presentation	8 mins	10	N	Individual

Teaching Periods

## Spring Campbelltown

### Day

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

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=NATS2008\\_22-SPR\\_CA\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS2008_22-SPR_CA_D#subjects))