

NATS 3034 MOLECULAR MEDICINE

Credit Points 10

Legacy Code 300927

Coordinator Mark Temple (<https://directory.westernsydney.edu.au/search/name/Mark Temple/>)

Description Molecular Medicine is an inquiry based capstone unit that integrates core concepts in molecular and cell biology with a focus on cancer as a framework to discuss autoimmune, infectious and genetic diseases. This unit aims to enhance critical thinking for the professional environment and prepares students for future innovations in prevention, management and cure of catastrophic diseases. Current research, diagnosis, treatment and policy issues, related to health and disease states, are placed in the context of real world experiences and changing imperatives.

School Science

Discipline Medical Science

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 3 subject

Pre-requisite(s) Students are required to pass two units from the following - BIOS 3014 - Genes Genomics and Human Health BIOS 2018 - Genetics BIOS 2026 - Molecular Biology BIOS 2014 - Functional Proteins and Genes BIOS 2021 - Metabolism BIOS 3001 - Advanced Cell Biology

Equivalent Subjects LGYA 6144 - Molecular Basis of Disease LGYA 6012 - Mammalian Molecular Medicine

Learning Outcomes

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

1. Describe the molecular biology of a gene in the context of various monogenic diseases and of various genes in the development of a complex disease
2. Outline the potential of various genetic technologies diagnose and to treat disease
3. Explain the potential of various molecular analyses to diagnose and to treat disease
4. Explain the basis of cancer genetics
5. Demonstrate an ability to search and collate data from internet based health databases
6. Evaluate new developments in functional genomics in relation to their potential to diagnose disease

Subject Content

1. Molecular analyses in the context of diagnosis and treatment of disease
2. New genetic technologies in diagnosis and treatment of disease
3. The nature of cancer as characterised by genetic factors, tumor viruses and cellular oncogenes
4. Control of cell invasion, metastasis and angiogenesis by growth factors, receptors and cytoplasmic signalling and tumor suppressor genes

5. Genomic integrity and multistep tumorigenesis

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
Oral Presentation	7 minutes	20	N	Individual
Research Report	<1,000 words	20	N	Individual
Poster Presentation	10 minutes	10	N	Individual
Computer Workshops	Variable	10	N	Individual
Final Online Exam	2 hours	40	N	Individual

Teaching Periods

Spring Campbelltown Day

Subject Contact Mark Temple (<https://directory.westernsydney.edu.au/search/name/Mark Temple/>)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=NATS3034_22-SPR_CA_D#subjects)

Parramatta - Victoria Rd

Day

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