NATS 3030 MEDICAL MICROBIOLOGY

Credit Points 10

Legacy Code 300826

Coordinator Colin Stack (https://directory.westernsydney.edu.au/search/name/Colin Stack/)

Description Infectious diseases worldwide are the most common cause of illness. Medical microbiology is subdivided into four areas: virology, bacteriology, mycology (the study of fungi) and parasitology. The rapid evolution of microbes means that this is an area that does not remain static. This subject has a modern approach to the study of the balance between the host, humans, and the very large army of potential invaders. Students will embark on a journey into the world of pathogenic micro-organisms exploring the molecular mechanisms by which these override host defences leading to disease. Infectious diseases of the human body systems as well those of the immunocompromised and infections contracted in the healthcare setting (nosocomial) are discussed. The theory will be supported with laboratory experience representing diagnostic procedures for the identification of infectious agents.

School Science

Discipline Medical Science

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) BIOS 2022

Equivalent Subjects LGYA 5866 - Medical Microbiology NATS 3031 - Medical Microbiology

Restrictions

Successful completion of 120 credit points

Learning Outcomes

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

1. Differentiate the mechanisms of infections caused by true pathogens from those caused by opportunistic pathogens
2. Describe the factors and mechanisms by which the human host is protected from microbial invasion
3. Understand and apply appropriate biochemical and molecular techniques used in the identification of clinical specimens
4. Explain the rationale behind the performance of antimicrobial susceptibility tests
5. Analyse and interpret scientific literature and effectively communicate
6. Associate the various infectious agents that affect special populations with the conditions that predispose these patients to a particular infection

Subject Content

1. Principles and practices of medical microbiology
2. Non-specific and specific (immune system) defence of the human body
3. Principles of the pathogenesis of disease including mechanisms by which microbial agents override the host non-specific and specific defence system to produce disease at the molecular level
4. Diseases of the human body systems and respective aetiological agents
5. Specimen collection techniques for the detection of microbial pathogens
6. Laboratory diagnostic procedures for the isolation, identification and antibiotic sensitivities where applicable of microbial pathogens
7. Molecular techniques and development of new diagnostic capabilities for microbial pathogens
8. Current areas of research interests in medical microbiology

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
Essay	1,500 words plus 5 minute presentation	35	N	Individual	N
Practical Exam	60 minutes	30	N	Individual	N
Quiz	45 minutes	15	N	Individual	N
Quiz	60 minutes	20	N	Individual	N

Prescribed Texts

- Sherris Medical Microbiology 8th Edition 2021 Kenneth J. Ryan, Nafees Ahmad, J. Andrew Alspaugh, W. Lawrence Drew, Michael Lagunoff

Teaching Periods

Spring (2025)

Campbelltown

Hybrid

Subject Contact Colin Stack (https://directory.westernsydney.edu.au/search/name/Colin Stack/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS3030_25-SPR_CA_3#subjects)

Parramatta - Victoria Rd

Hybrid

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS3030_25-SPR_PS_3#subjects)