

Module specification

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Module code	SCI550
Module title	Medical Microbiology
Level	5
Credit value	20
Faculty	FAST
Module Leader	Neil Pickles
HECoS Code	100265
Cost Code	GAFS

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Biomedical Science	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	30 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	30 hrs
Placement / work based learning	0 hrs
Guided independent study	170 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	21 April 2021
With effect from date	September 2022
Date and details of revision	
Version number	1

Module aims

This module aims to:

1. Establish a broad and deep knowledge of microbial pathogens, their life cycles and interaction with human and other hosts.
2. Explore traditional and contemporary control measure for pathogenic micro-organisms in both the human body and the hospital and laboratory environment, and how these may change in the future.
3. Apprise students of a range of routine microbiological tests essential for the modern pathology laboratory.
4. Facilitate the application of knowledge to real life through case study based role-playing scenarios.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Analyse key pathogenic organisms in humans, and the clinical manifestations of infection on the human body.
2	Evaluate a range of control measures available for the control of microbial pathogens in a human population.
3	Evaluate by reference to appropriate theory the selection of test methods for given applications in a microbiology laboratory.
4	Analyse medical microbiology confidently in a clinical environment.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Assessment 1. Working in small teams, individuals given assigned roles must develop a strategy for the management of an infective agent posing a significant health risk to a population. Assessment will be by means of submission of briefing papers (1000 words) and a group presentation / press conference (20 minutes).

Assessment 2. Examination, duration 1 hour, to test knowledge and analysis of the key pathogenic organisms in humans, and the clinical manifestations of infection on the human body.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	2-4	Group Project	60%
2	1	Examination	40%

Derogations

This module must be passed at or above 40%.

Compensation for failure is not permitted for this module and other “core” biomedical science modules across the programme.

Learning and Teaching Strategies

Delivery of taught content in this module will involve flipped classroom, scale-up methodologies and lead lectures, seminars, tutorials, case studies and student-led presentations.

Students will benefit from a structured programme of directed learning.

Indicative Syllabus Outline

The module develops introductory microbiology skills and knowledge acquired at level 4 to a level appropriate to a Biomedical Science graduate. This entails the student learning a significant core knowledge underpinning the subject, and applying this in a role playing task representing a real life scenario.

Key topics:

Microbial Life Cycles and relevance to control of infection and disease.

Control of Micro-organisms in the Human body – vaccination and antimicrobial therapies

Drug resistance – case studies, mechanisms of resistance, future problems and solutions.

Control of micro-organisms in the clinical and laboratory environment.

Public Health Control Measures – case studies

Pathological microbes 1: Gram +’ve and Gram –’ve cocci

Pathological microbes 2: Gram +’ve and Gram –’ve bacilli

Other Pathological Microbes.

Microbiological Test Methods in the Pathology Laboratory – key identification and screening methods in bacteriology and virology.

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Murray, P.R., Rosenthal, K.S. and Tenover, M.A. (2020) Medical Microbiology. 9th Ed. London: Elsevier.

Other indicative reading

Ford, M. (Ed.) (2019) *Medical Microbiology*. 3rd Ed. Oxford: Oxford University Press.

Goering, R., Dockrell, H., Zuckerman, M. and Chiodini, P.L. (2019) *Mims' Medical Microbiology and Immunology*. 6th Ed.

Levinson, W., Chin-Hong, P., Joyce, E.A., Nussbaum, J. and Schwartz, B. (2018) *Review of Medical Microbiology and Immunology: A Guide to Clinical Infectious Diseases*. 15th Ed. New York: McGraw Hill Education.

Garner, D. (2019). *Microbiology Nuts & Bolts: Key Concepts of Microbiology & Infection* 3rd Ed. Microbiology Nuts and Bolts

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Enterprising
Creative
Ethical

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication