

Module specification

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Module code	SCI644
Module title	Infectious Disease, Immunity & Inflammation (IDII)
Level	6
Credit value	20
Faculty	FSLS
HECoS Code	100265
Cost Code	GANG

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	24 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	24 hrs
Placement / work based learning	0 hrs
Guided independent study	176 hrs
Module duration (total hours)	200 hrs

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Initial approval date	21 April 2021
With effect from date	September 2023
Date and details of revision	Derogation update
Version number	2

Module aims

The module aims to provide students with a detailed understanding of infectious disease, immunity and inflammation in a clinical setting.

Specifically, the module will allow students to develop an understanding of the relationships that exist between aspects of human biology, infection control and medical microbiology; to understand the role of inflammation and the specific and non-specific immune responses; and to understand the molecular and cellular pathology of diseases involving the immune response (e.g. immune deficiency).

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

1	Critically discuss pathogenicity and evaluate the factors affecting pathogenicity in microorganisms.
2	Explain the modes of action, and evaluate the clinical usefulness, of the major antimicrobial agents.
3	Critically discuss the aetiology, pathogenesis, clinical features, laboratory identification and treatment of infectious diseases associated with the major organ systems, and to explain the importance of, and evaluate strategies for, infection control.
4	Discuss and evaluate mechanisms of cell signalling, cell-cell communication and immune responses as well as their association with organ transplantation.
5	Critically discuss the aetiology, pathogenesis, clinical features, laboratory identification and treatment of immunological disorders.

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 (60%): This will be an examination assessing students' knowledge of factors such as aetiology, pathogenesis, laboratory diagnosis and treatment of various microbial infections and diseases– 2 hours (60%, 2400 word equivalent) (learning outcomes 1-3.)

Assessment 2 (40%): Students will be provided with hypothetical case studies and will be required to provide a write up (1600 words equivalent) critically discussing factors such as cell signalling, inflammation, immune responses in disease states (learning outcomes 4-5)

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-3	Examination	60%
2	4-5	Written Assignment	40%

Derogations

All elements of assessment for 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

The module will comprise of lectures, seminars and computer assisted learning (incorporating digital imaging). Appropriate use will be made of text and electronic resources (VLE).

Formative assessment will be provided in dedicated seminar sessions focussing on case study analysis. Students will be expected to attend all timetabled sessions.

Indicative Syllabus Outline

- Microorganisms involved in medicine
- Microbial pathogenicity and defences against microbial attack
- Antimicrobial agents and human commensal flora
- Microbial diseases of selected organ systems
- Laboratory detection of microbes and infection control
- Inflammation and the leukocyte adhesion cascade
- Specific and non-specific immune responses (cells, processes, MHC, receptors, antigen presentation, antibodies).
- Non-specific and specific immune cells (e.g. antigen presentation, cytokines, co-stimulation, receptor engagement).
- Molecular and cellular pathology of diseases involving the immune response (e.g. hypersensitivity, allergy, auto-immune disease, immune deficiency diseases).
- Current research in medical microbiology and clinical immunology

Indicative Bibliography:

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

Essential Reads

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

Other indicative reading

Ahmed, N., Dawson, M., Smith, C., & Wood, E. (2007). *Biology of disease*. New York: Taylor & Francis Group.

Delves, P. J., Martin, S.J., Burton, D.R., & Roitt, I. M. (2016) Roitt's Essential Immunology (Essentials) (13th ed.). Wiley Blackwell.

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

Kumar, P., & Clark, M. (Eds.) (2016). *Clinical medicine*. (9th ed.). Edinburgh, United Kingdom: Elsevier Saunders Ltd.

Murphy, K. M. and Weaver, C. (2016). Janeway's immunobiology. (9th ed.). Abingdon, United Kingdom: Garland Science, Taylor & Francis Group.

Open Access Journals:

PLOS Medicine (www.plosmedicine.org/)

British Journal of Biomedical Science (<http://www.bjbs-online.org/>)

European Journal of Medical Research (<http://www.eurjmedres.com/>)

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