Module Specification

Immunology

Version: 2025-26, v3.0, Approved

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Part 1: Information

Module title: Immunology

Module code: USSJXQ-15-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Infection and Disease 2024-25, Infection and Disease 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: In this interactive and practice-oriented module, we explore the individual components of the immune system, then more complex interactions involved with named human diseases, and how this knowledge is being applied to immunotherapy.
Alongside lectures, students learn the theory and practice of key immunodiagnostic techniques, which are contextualised in case-based clinical and research scenarios. Practical learning is underpinned by lecture content, and vice versa.

This module underpins, extends and compliments the immunology content within the Studies in Biology of Disease, as well as providing extensive practical based experience that is well- regarded externally.

Pre-requisite: Students must have passed USSKA7-30-1 Infection and Disease before starting this module.

Features: Not applicable

Educational aims: The aims of this module are to help you to discover how the pieces of the human immune system work and come together to protect us from infection and tissue injury, or become dysregulated to cause or exacerbate disease. It will teach you how to test for infection, disease and immune dysregulation in the lab, and how to analyse and interpret immunological lab results.
The knowledge skills and behaviours you learn will prepare you well for life as a scientist, a researcher, a problem-solver and a deep thinker.
Topics help you to start thinking about how individuals like you can make a significant contribution to how we teach, think about and interpret immunology.

Outline syllabus: In this module you will examine basic cellular and molecular immunology, as well as clinically-relevant immunopathology in theory and practice.

Interactive lectorials are used to teach basic cellular and molecular immunology such as innate and acquired immunity, self, non-self and danger theories, complement, cytokines, antigen processing and presentation, antigens and immunogens, molecular recognition, cellular and humoral responses, roles of antibodies and effector cells.

Once the basics are covered we can pull them together and apply them to understanding clinical conditions like hypersensitivity, autoimmunity and tolerance, cancer immunology, immunodeficiency and HIV, as well as interventions like immunotherapy and immunization.

The practicals are based on the interaction of antigens with antibodies which can be used diagnostically and may include: Immunoelectrophoresis, Ouchterlony,

Precipitin curve, SDS-PAGE and Western Blotting in clinical or research case based contexts.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching will be in the form of interactive lectures and practical classes.
Lectures will be interspersed with questions to encourage active learning, and links through to practical or clinical application and real life examples.
Module delivery is cognisant of different learning styles and seeks to meet all these needs. Lectures are interspersed with practical classes that focus on the uses of antigen- antibody interactions in a variety of settings for clinical application.
Practical videos, power point slides, question sheets, lecture recordings and quizzes are employed to support self- directed learning.

Distinctive features:
Teaching style incorporates a good balance of visual, auditory, written and kinaesthetic learning (hands-on, text, pictures, figures, oral narrative and inclusive examples or anecdotes). Slides are clearly flagged to identify to students what is basic core knowledge, and what is needed to show understanding and depth of knowledge for the higher grade boundaries. Practicals are designed to build on the student practical experience across the series and incorporate material from the lectures across the term.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Be able to analyse, interpret and evaluate results from essential immuno-diagnostic tests; critique the methods, and demonstrate understanding of their underpinning theory (core employability skills).

MO2 Be able to discuss and explain how immune cells, molecules, and mediators may contribute to human disease and diagnosis; and how they may be activated by antigens, immunogens, danger, infection and injury.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ussjxq-15-2.html

Part 4: Assessment

Assessment strategy: Assessment: Primary Source Exercise (1500 words maximum)

Students will be given a written practical exercise to complete across term – (BB submission two weeks after the last taught session) - containing practical results, data and questions to analyse, interpret, explain, and answer. MOs will be assessed. including application of skills and knowledge in the analysis, evaluation and interpretation of data, figures and results. Method critiques and underpinning theory will be needed, and may require confirmation with other suggested tests.

Questions will assess immune theory ie how immune cells, molecules and mediators contribute to results, pathology or treatment; and how the responses are triggered. Formative feedback on the first practical (extra to the assessed 5) will provide a guide for expected details, and how to answer the questions in the assessment well. Formative feedback is also given during each practical and during lectures.

A practical handbook will be completed in class, in which theory, results, critique and interpretation of each practical can be collated. This handbook will act as a useful resource to apply to the assessed paper, and completion in class will gain an engagement mark.

Assessment tasks:

Primary Source Exercise (First Sit)
Description: Booklet of immunological figures and data (1500 words)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Primary Source Exercise (Resit)
Description: Booklet of immunological figures and data (1500 words)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biomedical Science [Frenchay] BSc (Hons) 2023-24

Biomedical Science {Foundation} [Frenchay] BSc (Hons) 2023-24

Biomedical Science [Frenchay] MSci 2023-24

Biomedical Science {Foundation} [Frenchay] MSci 2023-24

Biomedical Science [Frenchay] - WITHDRAWN MSci 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2022-23

Biomedical Science [Frenchay] MSci 2022-23