

Summary Information

Module Code	5103BMBMOL
Formal Module Title	Immunology and Infection
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Sidgi Hasson	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Darren Sexton	Yes	N/A
Glyn Hobbs	Yes	N/A
George Sharples	Yes	N/A
Vicki Anderson	Yes	N/A
Kate Evans	Yes	N/A
Joanne Foulkes	Yes	N/A
Janice Harland	Yes	N/A
Ismeni Nakouti	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Pharmacy & Biomolecular Sciences

Learning Methods

Learning Method Type	Hours
Lecture	31
Practical	18
Workshop	6

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	An introduction to the practical and theoretical concepts of medical microbiology and immunology. To provide an understanding of the principles and practices involved in the laboratory diagnosis, prevention and treatment of infectious diseases in humans.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Apply knowledge of the range of microorganisms involved in human disease processes and the role of normal microbiota in health and disease
MLO2	Apply knowledge in the identification of pathogenic organisms and in the treatment of infectious disease
MLO3	Apply knowledge of cellular and humoral components of the immune response and selected immunological techniques
MLO4	Review the principles of vaccination and the role of immunity in infectious diseases

Module Content

Outline Syllabus

Microorganisms involved in human disease and mechanisms of pathogenicity. Public Health microbiology. Clinical specimens used in the diagnosis and prevention of infectious disease together with an appreciation of normal microbiota contaminants. The importance of microbial culture and microscopy procedures for the isolation and identification of suspected pathogens. Biochemical, serological and molecular methods used in identification of bacteria and viruses. The modes of action of selected antimicrobial and anti-viral chemotherapeutic agents together with methods for determining their effectiveness and potential toxicity. The emergence of bacterial resistance and the value of drug resistance epidemiology. Overview of Immunity: concepts of self and non-self, innate and adaptive immunity, acute and chronic inflammation, immune surveillance and tolerance, specificity and diversity of immune response. primary and secondary responses. Immune cells and tissues. Humoral immunity: antibody structure and function, primary and secondary responses, antigen-antibody interactions, complement, acute phase reactions, cytokines. Cellular immunity: B and T cell receptors and the MHC; antigen presentation, clonal expansion, concepts of immunological memory Selected immunological techniques, Vaccination: active and passive immunisation Role of immune system in defence processes (e.g. elimination of microorganisms, tumour surveillance, induction of inflammation) and as a therapeutic tool. Introduction to immune dysfunction (e.g. hypersensitivity, autoimmunity, immunodeficiency) and immunity in pregnancy; case studies of selected diseases including diagnosis and therapy. The immune system and cancer. Prophylaxis and immunotherapy

Module Overview

This module provides an introduction to the practical and theoretical concepts of medical microbiology and immunology. It will also provide an understanding of the principles and practices involved in the laboratory diagnosis, prevention and treatment of infectious diseases in humans.

Additional Information

Infection and immunity is designed so students may learn and fully appreciate the importance of microorganisms and the immune system in human health and disease. The content is practically orientated in order to develop important skills that may later be appreciated in the workplace environment. Students are encouraged to use reviews, papers and subject specific texts. There is a wide range of medical microbiology and immunology textbooks available. Students should have access to one of each. No specific benchmarks are available for this module, but the learning outcomes at least meet, if not exceed, those stipulated in the relevant qualification descriptors for a higher education qualification at level 5 as defined by QAA, Sept 2015. The module has also been informed by the benchmark statement for Biomedical Science June 2015. Intake is every September. The criteria for admission to the module require that candidates meet the criteria for admission to the BSc Biomedical Science programme (32805). The final award is Certificate of Professional Development in Immunology and Infection, 20 credits at Level 5. The students have access to a module Canvas site and the University's other range of electronic support such as access to the electronic library facilities. The module content is regularly updated on the Canvas site including contemporary reading lists and links to journal articles. Students have access to the community site for Biomedical Science. All students have access to the module leader through phone contact and email. Module and CPD guides are also provided, which provide a range of information. The programme is assessed and run in line with the Academic Framework <http://www.ljmu.ac.uk/eaqs/121984.htm> The module is accredited by The Institute for Biomedical Science (Sept 2016- Aug 2021). The module forms part of the BSc Biomedical Science programme (32805) which was reviewed in April 2016. The methods for improving the quality and standards of learning are as follows: • Annual monitoring Review; • Liaison and feedback from the students; • Reports from External Examiner; • Programme team ensuring the module reflects the values of the current teaching and learning strategy; • Module leader updating knowledge and skills to ensure these remain current and relevant. The module is included in the programme specification for the BSc Biomedical Science programme (32805). The module is aligned with the same BSc Biomedical Science module for annual monitoring and external examining purposes.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Portfolio	immunology online	50	0	MLO3, MLO4
Test	microbiology practical and mcq	50	0	MLO1, MLO2