

Liverpool John Moores University

Title: ADVANCED INFECTION AND IMMUNITY
Status: Definitive
Code: **6012BMBMOL** (113099)
Version Start Date: 01-08-2019

Owning School/Faculty: Pharmacy & Biomolecular Sciences
Teaching School/Faculty: Pharmacy & Biomolecular Sciences

Team	Leader
Darren Sexton	Y
Jo Foulkes	
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Academic Level: FHEQ6 **Credit Value:** 24 **Total Delivered Hours:** 48
Total Learning Hours: 240 **Private Study:** 192

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	27
Practical	12
Seminar	3
Workshop	3

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Report	Essay titles will be given in advance. Students will prepare one title.	20	
Essay	Essay	Students will be asked to prepare a report on one of the practicals and workshops in the series.	20	
Exam	Exam	Three essays from a choice of six.	60	3

Aims

To provide an understanding of the origins of, and immune responses to infectious diseases. To be familiar with strategies for prevention and techniques for diagnosis and treatment of infectious diseases.

Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss the role of microorganisms in disease.
- 2 Discuss the generation of immune responses and their disorders.
- 3 Explain strategies used by pathogens for immune evasion.
- 4 Discuss the role of the clinical laboratory in diagnosis and treatment of immune and infectious disorders.
- 5 Discuss procedures for control of infectious diseases.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Prepare a practical report	1	4			
Write an in-class essay	1	2	3	4	5
Written examination	1	2	3	4	5

Outline Syllabus

The range of microorganisms important in human disease and the basis for their classification. The relationship between structure and function to virulence. Microorganisms responsible for selected clinical infections and risk factors associated with transmission of disease. Mechanisms of immune evasion used by pathogens.

Immune recognition of pathogens; generation of diversity through B and T cell receptor genes; thymic selection and tolerance. Antigen processing and presentation and the role of the major histocompatibility complex; B and T lymphocyte activation; cytokines and chemokines. Regulation of immune responses; immune surveillance. Immunodeficiency and opportunist infections.

Laboratory techniques for diagnosis of:

1. *Immune disorders: immunochemistry, immunofluorescence.*
2. *Bacterial infection: molecular, microscopic and biochemical methods.*
3. *Virus infection: isolation systems, serological and molecular methods. The value of microscopy in identification of viruses.*

Vaccine design and vaccination policies; the role of the clinical laboratory in therapy

and therapeutic drug monitoring; use of antiviral and antibacterial drugs; causes of therapeutic failure; emergence of antimicrobial resistance. The value of epidemiological data in infection control; antibiotic policies and the control of resistant bacteria; hospital acquired infection, monitoring and control.

Learning Activities

Lectures, practicals, workshops, seminars.

Notes

This module provides students with advanced knowledge of pathogens, infectious diseases, immune responses and disorders of immunity.