

Liverpool John Moores University

Title: UNDERSTANDING AND CONTROLLING VIRAL INFECTIONS
Status: Definitive
Code: **7101VMBMOL** (123648)
Version Start Date: 01-08-2021

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

Team	Leader
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Mark Wainwright	
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Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 42

Total Learning Hours: 200 **Private Study:** 158

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Tutorial	40

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Written examination	60	2
Essay	Essay	Essay	40	

Aims

- 1. To provide students with the fundamental principles of epidemiology as related to viral diseases*
- 2. To extend knowledge and appreciation of the scientific principles used in the control of viral infections and related diseases*
- 3. To introduce students to the roles of viruses in development of cancers*

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate a systematic understanding of the basic concepts and use of epidemiology and its application in understanding and preventing viral diseases
- 2 Discuss the principles of vaccination, the various types of anti-viral vaccines available and explain the benefits of childhood vaccine strategies and other selective vaccines
- 3 Critically evaluate the mechanisms and strategies for antiviral drug usage together with an advanced understanding of the characteristics of an ideal antiviral drug and how resistance occurs, and its implications for viral infections
- 4 Critically evaluate the types of virus-host relationships important in human carcinomas, the disease processes, and the impact on the immunocompromised host

Learning Outcomes of Assessments

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

Exam	2	3	4
Essay	1		

Outline Syllabus

Basic concepts of epidemiology and causal relationships

Use of epidemiology to predict and control the spread of viral diseases, using AIDS, influenza, small pox and haemorrhagic fevers as examples

Cohorts, rates, incidence and prevalence, the predictive values of positive and negative results and the scope and use of meta-analysis

Smallpox eradication as an example of a successful vaccination campaign and poliomyelitis vaccination as an example of a current campaign

Principles of vaccination, passive and active vaccination, selective and universal vaccination, attenuation, prophylactic and therapeutic vaccines and adjuvants

Attenuated and killed vaccines, split vaccines, subunit vaccines, peptide vaccines, recombinant antigens, DNA vaccines (especially in relation to usage in the immunocompromised host)

Childhood vaccination schedules, chronicity and carriers

Strategies for antiviral drug usage, potency, bioavailability, drug resistance, topical agents

Antiviral drugs and their clinical use against influenza, herpesviruses, HIV

Interferon, nucleoside and non-nucleoside analogues, protease inhibitors, reverse transcriptase inhibitors, neuraminidase inhibitors

Tumours, malignancy, transformation and oncogenesis

Papovaviruses (Polyomaviruses, Papillomaviruses, HPV) and vaccines

Herpesviruses and cancer (EBV, HHV-8)

Hepatitis viruses and cancer (HBV, HCV) and vaccines

Retroviruses and cancer (HTLV-1, HTLV-2)

Learning Activities

Distance learning with tutorial support

Learning materials delivered by VLE (Blackboard) to include directed reading, online lectures, online assessments with feedback, online discussions

Notes

There will be particular emphasis on developing independent learning skills and IT capability to access and extract relevant scientific information via Blackboard and databases available from LJMU. Online literature searches and evaluation of relevant scientific and popular literature will be key aspects, together with development of communication skills. An interactive reading list, including e-texts, will be made available via VLE.

This module will be offered as a single module CPD.

ADDITIONAL INFORMATION REQUIRED FOR SINGLE-MODULE CPD AWARDS (in lieu of a Programme Specification)

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 7 (Master's degree characteristics) as defined by QAA, Sept 2015. The module has also been informed by the benchmark statement for Biomedical Science June 2015.

The module is delivered by Blackboard, which is supported by a Virology Tutor. Study mode is part-time distance learning and lasts for 1 semester. Attendance is only required for the module examination. Intake is every January.

The criteria for admission to the module require that candidates meet the criteria for admission to the MSc Virology programme (31066).

The final award is Continuing Professional Development in Understanding and Controlling Viral Infections, 20 credits at Level 7.

The students have access to a module Blackboard 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 Blackboard site including contemporary reading lists and links to journal articles. Students have access to the community site for Virology. All students are assigned a personal Virology Tutor for support and guidance through the module, this maybe via email or online tutorials. There is also 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 2015- Aug 2020). The module forms part of the MSc Virology programme (30966) which was reviewed in June 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 and/or Specialist Virology author updating knowledge and skills to ensure these remain current and relevant.

The module is included in the programme specification for the MSc Virology programme (31066). The module is aligned with the same MSc Virology module for annual monitoring and external examining purposes.