

BMS4005B: MEDICAL VIROLOGY

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Medical Virology

Subject Code

BMS - Biomedical Sciences

Course Number

4005B

Academic Unit

Biomedical Sciences (BMS)

College/School

College of Biomedicine (BD)

Course Duration

One Semester

Credit Units

2

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

BMS2201 Molecular Biology of Cell or BMS2206 / BCH/CHEM2066 Cell Biology

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Additional Information

Note: BMS4005B does not contain any practical component, and has a credit unit value of 2.

Part II Course Details

Abstract

This course aims to provide students with a fundamental background for understanding the various types of virus that infect all forms of life. Students will need to learn their replication process in cells from the molecular aspects.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Learn the basic concept of virus structure, viral life cycle, infections, outbreak, pathogenesis and human diseases caused by viruses through lectures and tutorials	50		x	
2	Evaluate the benefit and disadvantages of lab measure, prevention and treatment strategies	15		x	x
3	Complete a range of assays for the molecular diagnosis of virus infections	15		x	x
4	Define the principles of host-virus interactions, including virus encoded genes expression and regulation by host proteins, virulence and pathogenesis	20		x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs	Brief Description	CILO No.	Hours/week (if applicable)	
1	Lectures	Lectures deliver subject-specific knowledge: virus classification, viral structure, clinical laboratory measures, viral life cycle and control, outbreak, pathogenesis, virus and disease control	1, 2, 3, 4	39

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Presentation: each student will be assigned a special topic about a specific virus and its associated human disease. The student will present the general information of the virus and disease, epidemiology, outbreak control, antiviral measures or control strategies, etc.	1, 2, 3, 4	20	Each student will present on selected topics or research articles. Lecturer will score the presentation.	No
2	Class Participation	1, 2, 3, 4	5	Attendance and participation in discussion	No

Continuous Assessment (%)

25

Examination (%)

75

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

40

Additional Information for ATs

Minimum Passing Requirement: A minimum of 40% in continuous assessment as well as in examination.

Assessment Rubrics (AR)**Assessment Task**

1. Presentation

Criterion

Challenges students to actively participate and discuss to solve problems that evaluate their performance and knowledge learnt.

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

2. Class Participation

Criterion

Encourage students to think critically by allowing them to ask questions and have in class discussion, grading will be based on how actively the students get involved in class discussion

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

4. Final Exam

Criterion

To test students' application of material taught in class and evaluate their performance based on their performance on the exam

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

- Viral pathogens
- Influenza virus
- Enterovirus
- Coronavirus
- Hepatitis virus
- Retrovirus
- Human papillomavirus
- Herpes Simplex Virus
- Cytomegavirus
- Zika Virus/Dengue Virus
- Ebola virus
- Measles virus
- Virus structure
- Virus infection cycles
- Methods in Medical Virology
- Mechanisms of viral pathogenesis

Reading List

Compulsory Readings

	Title
1	Virology-Principles and Applications (2nd Edition) John B Carter and Venetia A. Saunders
2	Medical Virology (4th Edition) by David O White, Frank J Fenner
3	Principles of Virology (4th Edition) By Jane Flint, Vincent R Racaniello, Glenn F Rall, Anna Marie Skalka

Additional Readings

	Title
1	Journal of Virology (jvi.asm.org)
2	Cell Host and Microbe (http://www.cell.com/cell-host-microbe/home)
3	PLOS Pathogens (http://journals.plos.org/plospathogens/)
4	Journal of Medical Virology-Wiley Online Library(http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1096-9071/issues)