

# BMS4005B: MEDICAL VIROLOGY

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## Effective Term

Semester A 2023/24

## Part I Course Overview

### Course Title

Medical Virology

### Subject Code

BMS - Biomedical Sciences

### Course Number

4005B

### Academic Unit

Biomedical Sciences (BMS)

### College/School

Jockey Club College of Veterinary Medicine and Life Sciences (VM)

### 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 / 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 self-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.

### Teaching and Learning Activities (TLAs)

TLAs	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
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.
2	Class Participation	1, 2, 3, 4	5	Attendance and participation in discussion

**Continuous Assessment (%)**

25

**Examination (%)**

75

**Examination Duration (Hours)**

2

**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

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### 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

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