BMS8111: IMMUNOLOGY AND INFECTIOUS DISEASES

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Immunology and Infectious Diseases

Subject Code
BMS - Biomedical Sciences
Course Number
8111

Academic Unit
Biomedical Sciences (BMS)

College/School
College of Biomedicine (BD)

Course Duration
One Semester

Credit Units
3

Level
R8 - Research Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

This course covers advanced knowledge of innate and adaptive immunity, along with the mechanisms used by pathogens to invade, replicate and spread within human and animal populations. Students will learn the basic principles underlying host-pathogen interactions and the experimental tools required to understand those interactions. On the immunology side, this course will cover the signaling pathways in the context of infection and autoimmune dysfunction. On the pathogen side, students will study a wide variety of disease agents (ranging from viruses to bacteria, protozoal, and worms pathogens) in order to identify the mechanisms they use to establish acute and chronic infection in different host species.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	To acquire basic knowledge on innate and adaptive immune systems	25	x	x	
2	To understand signaling pathways in the context of infection and autoimmune dysfunction	25		x	
3	To understand wide variety of disease agents in order to identify the mechanisms they use to establish acute and chronic infection in different host species	25		x	x
4	To acquire basic knowledge on infectious agents for specific diseases.	25		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	Basic knowledge will be taught mainly by lectures.	1, 2, 3, 4	2 hours/week (26 hours in total)
2	Tutorials	A forum for problem solving by applying the knowledge learned from the lectures.	1, 2, 3, 4	1 hour/week (13 hours in total)

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Group presentation and final report	1, 2, 3, 4	100	

Continuous Assessment (%)

100

Examination (%)
0

Minimum Continuous Assessment Passing Requirement (%)
0

Minimum Examination Passing Requirement (%)
0

Assessment Rubrics (AR)

Assessment Task
Coursework (Group presentation) (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Mid-term Quizzes: Quiz score will be used to verify the state of students' learning progress

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Less than Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Final report (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
To test students' basic knowledge learnt in class and see whether they can apply the knowledge in case studies

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Less than Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Coursework (Group presentation) (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Mid-term Quizzes: Quiz score will be used to verify the state of students' learning progress

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Moderate

Failure
(F) Not even reaching marginal levels

Assessment Task
Final report (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
To test students' basic knowledge learnt in class and see whether they can apply the knowledge in case studies

Excellent
(A+, A, A-) High

Good
(B+, B) Significant

Marginal
(B-, C+, C) Moderate

Failure
(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus
Innate Immunity, Adaptive Immunity, Microbial pathogenicity, Pathogen-host interactions, Regulation of gene expression, Genetics of infectious diseases

Reading List

Compulsory Readings

	Title
1	Gerald B. Pier, Jeffrey B. Lyczak Lee M. Wetzler. Immunology, infection, and immunity. ASM Press, 2004.
2	Hofman P. Infectious Disease and Parasites. Springer, 2016.

Additional Readings

	Title
1	Kay AB, Bousquet J, Holt P, Kaplan AP. Allergy and allergic diseases. Wiley-Blackwell, 2008