BMS3002: CELLULAR PATHOLOGY

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Cellular Pathology

Subject Code
BMS - Biomedical Sciences
Course Number
3002

Academic Unit
Biomedical Sciences (BMS)

College/School
College of Biomedicine (BD)

Course Duration
One Semester

Credit Units
3

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

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
BMS2002 Pathophysiology or equivalent; AND
BMS2007 Human Anatomy or equivalent

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

Abstract

Cellular Pathology examines a wide range of either tissues or fluids. These include small samples taken for diagnostic purpose from a wide range of body sites. This course aims to provide students with a comprehensive overview of the key concepts, techniques and current laboratory practice used in cellular pathology (histopathology and cytopathology). Mechanisms of disease process will be studied with reference to the different causes and mechanisms of disease.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Recognize the differences between normal and diseased cells, differentiate cell degeneration and death, and how the cells adapt to an altered extracellular environment at the cellular and gross anatomical level		x		
2	Demonstrate the procedures generally used in diagnostic pathology			x	x
3	Identify the cellular changes in various states, such as genetic disorders, inflammation, immunopathology and neoplasia			x	
4	Describe how cells respond to different types ofinjury/wounds			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	1, 2, 3, 4	
2	Practical classes	Practical classes allow students to utilize subject-specificknowledge gained from lectures	2, 3	
3	Practical Reports	Practical reports are based on specific their knowledge and demonstrate subject-specific skills in carrying outexperimental work and dataanalysis	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Mid-term quiz (or quizzes)	1, 2, 3, 4	10	-	No
2	Laboratory reports	1, 3, 4	10	-	No

Continuous Assessment (%)

20

Examination (%)

80

Examination Duration (Hours)

3

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

40

Additional Information for ATs

Practical Examination (duration: 3 hours): 40% Written Examination (duration: 3 hours): 40% Examination total: 80% Minimum Passing Requirement: - Continuous assessment: 40%; and - Written examination: 40%; and - Practical examination: 40%. Please note that attendance in all practical sessions is mandatory for the completion of the course. Practical sessions are an integral part of the curriculum, providing hands-on learning experiences and essential for medical laboratory science training. Failure to attend practical sessions (an unauthorized absence and/or lateness) may result in a deduction of marks or, in extreme cases, may lead to failure in the course.

Assessment Rubrics (AR)

Assessment Task

1. Course assignments (written reports)

Criterion

Demonstrate the ability to explain the methodology and procedure

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. End-of-term examination

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

- Cell and tissue stabilization
- Preparative processes in cellular pathology
- Microscopy in cellular pathology
- Role of the electron microscope
- The theory of stain action
- Lipids and proteins including enzyme
- Immunocytochemistry
- Molecular biology in cellular pathology
- Molecular Diagnosis method and practical skills
- Quantitation: quality control in cellular pathology
- Infection by selected micro-organisms
- Cytopathology in diagnosis and as a screening process
- Systemic pathology

Reading List

Compulsory Readings

	Title
1	C Simon Herrington (2020). Muir's Textbook of Pathology. 16th Edition. CRC Press.
2	Geraldine O'Dowd (2023). Wheater’s Functional Histology: A Text & Color Atlas. 7th edition. Elsevier.
3	John Cook, Phil Warren (2015). Cellular Pathology: An Introduction to Techniques and Applications. 3rd edition. Scion Publishing Ltd.
4	Kim Suvarna, Christopher Layton, John Bancroft (2019). Bancroft's Theory and Practice of Histological Techniques. 8th Edition. Elsevier Health Sciences.
5	Kumar, Abbas, Aster, Deyrup (2022). Robbins and Kumar’s Basic Pathology. 11th Edition. Elsevier.

Additional Readings

	Title
1	Nil