City University of Hong Kong
Course Syllabus

offered by Department of Biomedical Sciences
with effect from Semester B 2023/2024

Part I Course Overview

Course Title:	**Cancer Biology and Precision Medicine**
Course Code:	**BMS8107A**
Course Duration:	**One semester**
Credit Units:	**2**
Level:	**R8**
Medium of Instruction:	**English**
Medium of Assessment:	**English**
Prerequisites: *(Course Code and Title)*	**Nil**
Precursors: *(Course Code and Title)*	**Nil**
Equivalent Courses: *(Course Code and Title)*	**Nil**
Exclusive Courses: *(Course Code and Title)*	**Nil**

Note: BMS8107A has a credit unit value of 2, and it will be only offered to taught master/postgraduate students only.

Part II Course Details

1. Abstract

The course aims to introduce the genetic basis of human cancer including mechanisms of mutations, the activation of oncogenes, the loss of tumour suppressor genes, and the roles of oncogenes and tumor suppressor genes in the regulation of cell cycle and apoptosis. This course will also focus on the principles and applications of modern cancer therapeutic approaches. Cancer stem cells and therapeutic approaches focused on cancer stem cells are also discussed.

2. Course Intended Learning Outcomes (CILOs)

No.	CILOs	Weighting	Discovery-enriched curriculum related learning outcomes		
			A1	*A2*	*A3*
1.	Describe the central themes in cancer biology.			✓	
2.	Identify the cellular basics and molecular mechanisms of cancer biology.		✓	✓	✓
3.	Integrate the genetic basis of human cancer.		✓	✓	
4.	Design a concept map based on published data to illustrate genetic basis of human cancer.		✓	✓	✓
		100%			

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.

3. Teaching and Learning Activities (TLAs)

TLA	Brief Description	CILO No.				Hours/week
		1	2	3	4	
Lecture	To learn through teaching.	✓	✓	✓	✓	26 hours in total
Quiz, test, assignment, presentation, case studies, etc.	To understand basic concepts and theories of cancer and biology.	✓	✓	✓	✓	

4. Assessment Tasks/Activities (ATs)

Assessment Tasks/Activities	CILO No.				Weighting	Remarks
	1	2	3	4		
Continuous Assessment: 50%						
Attendance	✓	✓	✓	✓	10%	
close-book midterm quiz	✓	✓	✓	✓	40%	
Examination: 50% (on-campus)						
					100%	

5. Assessment Rubrics

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
Quiz, test, assignment, presentation, case studies, etc.	Ability to show the learning progress, analyse and express the synthesis of ideas and knowledge	Outstanding performance on all CILOs. Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Substantial performance on all CILOs. Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Satisfactory performance on the majority of CILOs possibly with a few weaknesses. Being able to profit from the course experience; understanding of the subject; ability to develop solutions to simple problems in the material.	Unsatisfactory performance on a number of CILOs. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature
Examination	Ability to synthesize, state and apply the principles and subject matter learnt in the course				

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Quiz, test, assignment, presentation, case studies, etc.	Ability to show the learning progress, analyse and express the synthesis of ideas and knowledge	Outstanding performance on all CILOs. Strong evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	Substantial performance on all CILOs. Evidence of grasp of subject, some evidence of critical capacity and analytic ability; reasonable understanding of issues; evidence of familiarity with literature.	Satisfactory performance on the majority of CILOs possibly with a few weaknesses. Being able to profit from the course experience; understanding of the subject; ability to develop solutions to simple problems in the material.	Barely satisfactory performance on a number of CILOs. Sufficient familiarity with the subject matter to enable the student to progress without repeating the course.	Unsatisfactory performance on a number of CILOs. Failure to meet specified assessment requirements, little evidence of familiarity with the subject matter; weakness in critical and analytic skills; limited or irrelevant use of literature
Examination	Ability to synthesize, state and apply the principles and subject matter learnt in the course					

Part III Other Information

1. Keyword Syllabus

- Hallmarks of human cancer
- Oncogenes and Tumour suppressor genes
- Cancer stem cell
- Tumor invasion and metastasis
- Mutisteps of tumor progression
- Cell cycle and apoptosis
- Genomic instability of cancers
- Epigenetic mechanism
- Drug resistance
- Modern cancer therapeutic approaches

2. Reading List

2.1 Compulsory Readings

Nil

2.2 Additional Readings

Nil