City University of Hong Kong
Course Syllabus

offered by Department of Biomedical Sciences
with effect from Semester B 2017/2018

Part I Course Overview

Course Title:	**Advanced Cell and Molecular Biology**
Course Code:	**BMS8103**
Course Duration:	**One semester**
Credit Units:	**2**
Level:	**R8**
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
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**

Part II Course Details

1. Abstract

This course aims to introduce the most recent research in cell and molecular biology field to postgraduate research students. The students will learn about advanced research in cell and molecular biology based on the basic concepts. The students will acquire various techniques for cell and molecular biology experiments. It also aims to encourage students to develop their own research projects and interests based on the knowledge and techniques acquired in this course. This course is based entirely on coursework. The students are expected to complete a pre-course reading assignment.

2. Course Intended Learning Outcomes (CILOs)

No.	CILOs[#]	Weighting * (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Summarise advancement in cell and molecular biology	20%	✓		
2.	Apply molecular and cell biology principles to experiments	30%		✓	✓
3.	Critically evaluate outcomes and discuss advanced approaches to improve outcomes	30%		✓	✓
4.	Write a report in the format of journal manuscript	20%	✓	✓	✓
** If weighting is assigned to CILOs, they should add up to 100%.*		100%			

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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 (if applicable)
		1	2	3	4	
Lecture	To learn and understand advanced knowledge and state-of-the-art technologies in cell and molecular biology; To practice critical analysis and trouble-shooting	✓				2 hours/week (26 hours in total)
Reading and presentation			✓	✓		
Data analysis and discussion			✓	✓		
Report writing		✓			✓	

4. Assessment Tasks/Activities (ATs)

Assessment Tasks/Activities	CILO No.				Weighting*	Remarks
	1	2	3	4		
Continuous Assessment: 100%						
Critical discussion in the class		✓	✓		20%	
Scientific presentation of data in the format of graphs and figures		✓	✓		40%	
Written manuscript in journal publication format	✓			✓	40%	
Examination: 0%						
** The weightings should add up to 100%.*					100%	

5. Assessment Rubrics

Assessment Task	Criterion	Pass (P)	Failure (F)
Presentation, group discussion, critique etc.	Ability to show the learning progress, analyse and express the synthesis of ideas	Satisfactory to outstanding performance on all CILOs. Sufficient evidence of original thinking; good organization, capacity to analyse and synthesize; superior grasp of subject matter; evidence of extensive knowledge base.	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

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

Light and fluorescent microscopy; cell culture techniques; measurement of cell growth; immunocytochemistry and immunohistochemistry; DNA and RNA extraction; PCR and gel electrophoresis; gene cloning; online resources

2. Reading List

2.1 Compulsory Readings

Nil

2.2 Additional Readings

1.	How to write dissertations & project reports (2nd edition), McMillan, Weyers, Pearson Education books ISBN 13: 9780273743835, ISBN10: 027374383X
2.	Reading primary literature: a practical guide to evaluating research articles in biology. Gillen. Peasron Education Books ISBN13: 9780805345995, ISBN10: 080534599X
3.	Molecular Cell Biology 8th Edition. Lodish, Berk, Kaiser, Krieger, Bretscher, Ploegh, Amon, Martin. ISBN-13: 978-1464183393, ISBN-10: 1464183392
4.	http://www.protocol-online.org/prot/Molecular_Biology/
5.	http://collections.plos.org/ploscompbiol/tensimplerules.php
6.	http://www.invitrogen.com/site/us/en/home/References/Molecular-Probes-The-Handbook.html