

**City University of Hong Kong
Course Syllabus**

**offered by Department of Chemistry
with effect from Semester A 2021/22**

Part I Course Overview

Course Title:	Discovery in Biology
Course Code:	CHEM1200
Course Duration:	1 semester
Credit Units:	3 credits
Level:	B1
Proposed Area: <i>(for GE courses only)</i>	<input type="checkbox"/> Arts and Humanities <input type="checkbox"/> Study of Societies, Social and Business Organisations <input type="checkbox"/> Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	Nil
Precursors: <i>(Course Code and Title)</i>	Nil
Equivalent Courses: <i>(Course Code and Title)</i>	BCH1200 Discovery in Biology
Exclusive Courses: <i>(Course Code and Title)</i>	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

After a century in which physical sciences and engineering have dominated public attention, many of the most challenging issues in the 21st century are likely to be related to biology: dealing with emergent diseases, feeding the increasing world population, generating energy from biological sources, creating a better environment for sustainable growth. Biology is on the verge of answering some of the most fundamental questions of our existence: How do organisms grow and develop? To what extent can and should we manipulate biology for our purposes?

This course aims to equip students with little or no biological background with basic biological concepts needed to navigate in a world where biological knowledge is becoming increasingly essential for a global citizen. In this course, students will be guided to explore the intricacy and complexity of organisms and integrate this knowledge into the world around them.

The course will begin with an examination of the chemical basis of life, then move on to systems of increasing complexity, from genes to cells to ecosystems. At all times, the course will connect students to issues of human interest, examining social, ethical and environmental issues relevant to biology in the 21st century. The central theme is to apply biological concepts to familiar experiences and to help students share the excitement of science and its importance to their daily lives.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs [#]	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Explain basic concepts of biology governing the diversity and complexity of life.		✓		
2.	Apply basic biological concepts to discover and analyze the reasons behind local / regional / global issues in relation to daily life.		✓	✓	
3.	Examine and discover the roles of biology in society both today and in the future.		✓	✓	
		100%			

* If weighting is assigned to CILOs, they should add up to 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)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.			Hours/week (if applicable)
		1	2	3	
Lectures	Student will learn basic concepts of biology by a series of lectures on different topics.	✓	✓	✓	
Tutorials	Students will learn how to approach and solve biological questions.	✓	✓	✓	
Laboratory session	Students working in small groups to discover how standard procedures can explain lecture-related concepts and problems.		✓	✓	

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.			Weighting*	Remarks
	1	2	3		
Continuous Assessment: <u>40%</u>					
Lab exercise and lab-related quiz		✓	✓	10%	
Assignment	✓	✓	✓	30%	
Examination: <u>60%</u>					
Final Exam (end of semester) (1.5 hours)	✓	✓	✓	60%	
				100%	

* The weightings should add up to 100%.

Starting from Semester A, 2015-16, students must satisfy the following minimum passing requirement for courses offered by CHEM:

“A minimum of 40% in both coursework and examination components.”

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Lab exercises		Obtain 75% or above correct answers	Obtain 60% or above correct answers	Get 45% or above correct answers	Get 40% or above correct answers	Get less than 40% correct answers
2. Assignment		Obtain 75% or above correct answers	Obtain 60% or above correct answers	Get 45% or above correct answers	Get 40% or above correct answers	Get less than 40% correct answers
3. Final examination		Obtain 75% or above correct answers	Obtain 60% or above correct answers	Get 45% or above correct answers	Get 40% or above correct answers	Get less than 40% correct answers

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

1. Keyword Syllabus

(An indication of the key topics of the course.)

Microbiology
The Chemistry of Life
The Biology of Cells
Genetics
Ecology
Evolution and Biodiversity
Metabolism
Animal Physiology
A Brave New World

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	
2.	
3.	
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2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	“Biology The Dynamic Science”, Cengage Learning, 4th edition, 2017
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