

## Course Syllabus

**offered by Department of Chemistry  
with effect from Semester A 2020/21**

This form is for the completion by the Course Leader. The information provided on this form is the official record of the course. It will be used for the City University's database, various City University publications (including websites) and documentation for students and others as required.

Please refer to the Explanatory Notes on the various items of information required.

**Prepared / Last Updated by:**

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**City University of Hong Kong  
Course Syllabus**

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**Part I Course Overview**

<b>Course Title:</b>	General Ecology
<b>Course Code:</b>	CHEM3068
<b>Course Duration:</b>	1 semester
<b>Credit Units:</b>	4 credits
<b>Level:</b>	B3
<b>Proposed Area:</b> <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
<b>Medium of Instruction:</b>	English
<b>Medium of Assessment:</b>	English
<b>Prerequisites:</b> <i>(Course Code and Title)</i>	Nil
<b>Precursors:</b> <i>(Course Code and Title)</i>	CHEM2067/BCH2067 Diversity of Life and Evolution
<b>Equivalent Courses:</b> <i>(Course Code and Title)</i>	BCH3068 General Ecology
<b>Exclusive Courses:</b> <i>(Course Code and Title)</i>	Nil

## Part II Course Details

### 1. Abstract

(A 150-word description about the course)

In this course, students will:

- explore basic principles in ecology of individuals, interactions between different species as well as factors responsible for the regulation of population size and the structure and functioning of biological communities and ecosystems;
- identify and discuss the complexity of ecological systems and examine the interrelationship between organisms and the environment;
- analyze ecological data sets and draw valid conclusions from them.

### 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 <sup>#</sup>	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Describe the ecology of individuals and populations, and the structure and functioning of biological communities and ecosystems.	30%	✓		
2.	Discuss the principles and major factors involved in population growth, community interactions and ecosystem processes.	40%	✓	✓	
3.	Analyze ecological data sets provided and draw valid conclusions from them as well as develop skills in most effectively presenting the findings.	10%		✓	✓
4.	Design a laboratory protocol to study the ecology of selected individuals and populations, and/or the structure and functioning of biological communities and ecosystems.	20%		✓	✓
		100%			

\* If weighting is assigned to CILOs, they should add up to 100%.

<sup>#</sup> 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	4	
Lectures, tutorials, quizzes and take-home assignments	Students will learn to identify and describe the ecological characteristics of individuals and populations, and the structure and functioning of biological communities and ecosystems through lectures, tutorials, quizzes and take-home assignments.	✓				
Lectures and small group discussion activities	Students will work in small groups to identify and discuss various types of interactions among species and within communities, factors regulating population size, and biological/geochemical processes within ecosystems through lectures and small group discussion activities or take-home assignments.		✓			
Small group activities	Students will work in small groups on data sets provided and carry out numerical analysis of the data sets, interpret the findings and draw conclusions from them.			✓	✓	

### 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	4		
Continuous Assessment: <u>40%</u>						
Short quizzes	✓				16%	
Group activities / presentations		✓			16%	
Tutorial exercises, take-home assignments or presentations			✓	✓	8%	
Examination: <u>60%</u> (duration: 3 hours)						
					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. Short quizzes	understanding of the topic and reading materials; correctness of interpretation and analysis of experimental data	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Group activities / presentations	Understanding of the topic and material; completeness of the presentation; logic of the presentation structure; clarity of talk; appropriate use of photos and figures in the illustration of concepts; ability to discuss the presented topic	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Tutorial exercises, and take-home assignments	Correctness of interpretation and analysis of experimental data; understanding of the topic and reading materials; application of knowledge in solving real life problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Examination	Completeness and correctness of calculations/answers; correctness of interpretation and analysis of experimental data; application of knowledge in solving real life problems; logic of argumentation and intelligent use of course content/ original thinking	High	Significant	Moderate	Basic	Not even reaching marginal levels

**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.)*

- What is ecology?
- Principles and concepts on organismal ecology
- Ecology of sex and group living
- Population biology
- Intra- and inter-specific competition
- Trophic structure and relationships
- Community ecology
- Ecosystem types
- Ecosystem function and dynamics
- Biogeochemical cycles

**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.	
...	

**2.2 Additional Readings**

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

1.	Thomas M. Smith and Robert Leo Smith (2014) Elements of Ecology. 9th edition. Benjamin Cummings.
2.	Charles J. Krebs (2016) Ecology: The Experimental Analysis of Distribution and Abundance. 6th edition. Pearson.
3.	Manuel C. Molles Jr. (2016) Ecology: Concepts and Applications. 7th edition. McGrawHill.
4.	Peter Stiling (2015) Ecology: Global Insight and Investigations. 2nd edition. McGraw-Hill.

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

<b>GE PILO</b>	<b>Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)</b>
PILO 1: Demonstrate the capacity for self-directed learning	
PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology	
PILO 3: Demonstrate critical thinking skills	
PILO 4: Interpret information and numerical data	
PILO 5: Produce structured, well-organised and fluent text	
PILO 6: Demonstrate effective oral communication skills	
PILO 7: Demonstrate an ability to work effectively in a team	
PILO 8: Recognise important characteristics of their own culture(s) and at least one other culture, and their impact on global issues	
PILO 9: Value ethical and socially responsible actions	
PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation	

*GE course leaders should cover the mandatory PILOs for the GE area (Area 1: Arts and Humanities; Area 2: Study of Societies, Social and Business Organisations; Area 3: Science and Technology) for which they have classified their course; for quality assurance purposes, they are advised to carefully consider if it is beneficial to claim any coverage of additional PILOs. General advice would be to restrict PILOs to only the essential ones. (Please refer to the curricular mapping of GE programme: [http://www.cityu.edu.hk/edge/ge/faculty/curricular\\_mapping.htm](http://www.cityu.edu.hk/edge/ge/faculty/curricular_mapping.htm).)*

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

<b>Selected Assessment Task</b>