

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:

Name:	<u>Prof. Ying Li</u>	Academic Unit:	<u>Department of Biomedical Sciences</u>
Phone/email:	<u>3442 2669 / yingli@cityu.edu.hk</u>	Date:	<u>18 November 2019</u>

**City University of Hong Kong
Course Syllabus**

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

Part I Course Overview

Course Title:	Animal Physiology
Course Code:	CHEM3069 (and CHEM3069A)
Course Duration:	1 semester
Credit Units:	4 (3) credits
Level:	B3
Proposed Area: (for GE courses only)	<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: (Course Code and Title)	CHEM2066/BCH2066 Cell Biology <u>or</u> BMS2201 Molecular Biology of the Cell <u>and</u> CHEM2067/BCH2067 Diversity of Life and Evolution
Precursors: (Course Code and Title)	Nil
Equivalent Courses: (Course Code and Title)	BCH3069 (and BCH3069A) Animal Physiology
Exclusive Courses: (Course Code and Title)	Nil

Note: CHEM3069A does not contain any practical component, and has a credit unit value of three (3).

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course is a broad-based, introductory level course in animal physiology for the connections between physiology, anatomy, animal science, zoology, and creation of new knowledge through biomedicine research. Building on their prior knowledge in cell biology and biodiversity the students will study cellular, systems (function of organs), organismal (whole animal), and integrative (multiple levels of organization) physiology from the perspectives of energy metabolism, diversity of neural signalling, glands and hormones, muscle structure and contraction, and sensory systems. The students will be introduced to the major systems including locomotion, nervous, circulatory, respiratory, osmoregulatory, immune, endocrine, and digestive systems, behaviour and reproduction. They will learn how these systems operate and are regulated. Selected examples from invertebrates, vertebrates, mammalian, and human will be used to illustrate physiological principles.

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.	Describe the central themes in animal physiology	10%		✓	
2.	Identify the cellular and system basics and organs system of animal physiology	30%		✓	
3.	Compare and contrast the functions of organs and tissues	10%		✓	
4.	Integrate the different physiological systems	40%		✓	
5.	Design a concept map based on published data to illustrate physiological principles.	10%		✓	✓
		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	4	5	
Lectures, quizzes and discussions	Teaching and learning will be based on lectures, quizzes and discussions explaining and demonstrating the central themes in animal physiology.	✓					
Lectures, quizzes, tutorial assignments and lab practicals	Teaching and learning will be based on lectures, short quizzes, tutorial assignments (for CHEM3069 and CHEM3069A) and lab practicals (for CHEM3069 only) examining and reviewing the cellular basis of animal physiology.		✓				
Lectures	Teaching and learning will be based on lectures examining how body parts are linked and hence function together.			✓			
Lectures, quizzes, tutorial assignments and lab practicals	Teaching and learning will be based on lectures, short quizzes, tutorial assignments (for CHEM3069 and CHEM3069A) and lab practicals (for CHEM3069 only) illustrating the functions of the different physiological systems.				✓		
Concept map based on lab reports	Students are required to draw a concept map of selected physiological systems based on readings of published physiological experiments (for CHEM3069 only).					✓	

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	5	CHEM3069	CHEM3069A	
Continuous Assessment: <u>40%</u>								
Quizzes	✓					4%	4%	
Essays		✓	✓			16%	16%	
Discussions				✓		16%	20%	
Concept map based on lab reports					✓	4%	--	
Examination: <u>60%</u> (duration: 3 hours)								
* The weightings should add up to 100%.						100%	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. Quizzes	ABILITY to understand the selected questions of animal physiology	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Essays	ABILITY to explain in detail that create a complete and thorough answer to the selected issues/problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Discussions	CAPACITY for group discussion with accuracy to illustrate physiological principles	High	Significant	Moderate	Basic	Not even reaching marginal levels
4. Concept map based on lab reports	ABILITY to explain data and results taken from practical and fully understand the methodology and procedure	High	Significant	Moderate	Basic	Not even reaching marginal levels
5. Examination	ABILITY to describe the principles of basic physiology. Answer is carefully thought out and well organized. Handwriting is very neat	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.)

- The terminology and basic principles of structure and function in animals
Cardiovascular, respiratory, renal, endocrine, immune, and gastrointestinal physiology; locomotion, and sensory physiology; animal reproduction and central nervous systems
- The functions of different cell types and their interactions in organs system
- Mechanisms by which organ systems are controlled and functions coordinated
- Introduction of human physiology emphasizing mechanisms of control and regulation

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.	Principles of Animal Physiology, Moyes & Schulte, Pearson Benjamin Cummings
----	---

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:

GE PILO	Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)
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.)

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.

Selected Assessment Task