

BMS2202: DIVERSITY OF LIFE AND EVOLUTION

Effective Term

Semester A 2026/27

Part I Course Overview

Course Title

Diversity of Life and Evolution

Subject Code

BMS - Biomedical Sciences

Course Number

2202

Academic Unit

Biomedical Sciences (BMS)

College/School

College of Biomedicine (BD)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

CHEM1200 Discovery in Biology (for normative 4-year students only, not applicable for advanced standing I/II students) or
CHEM1300 Principles of General Chemistry

Precursors

Nil

Equivalent Courses

BCH2067 Diversity of Life and Evolution

Exclusive Courses

Nil

Part II Course Details

Abstract

In this course, students will:

- develop an understanding of the principles and importance of classification,
- develop an appreciation of Darwin's theory of evolution,
- examine the diversity of life in the Kingdoms Plantae and Animalia,
- explore the evolutionary processes through phylogenetic relationships, species interactions, and population dynamics,
- apply the insights of biodiversity to sustainability.

This course will provide the basic knowledge on evolution and biodiversity of life, and prepare for elective courses e.g. Animal Physiology and Plant Physiology.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the general principles of classification and binomial nomenclature for species naming.			x	
2	Explain Darwin's evidence on evolution and hypothesis of natural selection that produced the diversity of life on earth.		x	x	
3	Compare the diversity and characteristics of major groups of plants and animals including identification of local animal/plant species.		x	x	
4	Understand evolutionary processes through phylogenetic relationships, species interactions and population dynamics.		x	x	x
5	Discover the connection between evolution, ecology and biological diversity.			x	x

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 real-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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures	Students will learn the principles on classification, Darwin's evolution, basic morphological characteristic of plants and animals, and evolutionary processes.	1, 2, 3, 4	

2	Lectures and group presentations	Through lectures and group presentations students will learn the connection between evolution, ecology and biological diversity and how to apply the insights of biodiversity to sustainability.	2, 3, 4, 5	
3	Lectures and tutorial exercises	Evolutionary processes through species interactions and population dynamics as well as co-evolution of flowers and their pollinators will be examined through tutorial exercises.	2, 3, 4, 5	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Quizzes	2, 3	10	-	No
2	Oral presentations	2, 3, 4, 5	20	-	Yes
3	Report / Discussion / Assignment / Attendance	2, 3, 4, 5	10	-	Yes

Continuous Assessment (%)

40

Examination (%)

60

Examination Duration (Hours)

3

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

40

Assessment Rubrics (AR)**Assessment Task**

Quizzes

Criterion

Ability to explain biological concepts and their connection

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Oral presentation / report

Criterion

Capacity for self-directed learning to comprehend and explain in detail with accuracy the concepts of diversity and evolution

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Class and online discussion / assignment

Criterion

Ability to apply the knowledge of diversity and evolution in daily life

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Assessment Task

Examination

Criterion

Ability to explain and apply the concepts and principles of diversity and evolution

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information**Keyword Syllabus**Principles of classification and binomial nomenclature

The three-domain and six-kingdom classification system, taxonomic hierarchy and binomial nomenclature.

Darwin's theory of evolution

Natural selection as the mechanism of evolution. Adaptive radiations of animals and plants.

Evolutionary analysis

Explore the evolutionary processes through phylogenetic relationships, species interactions and population dynamics.

Plant diversity and evolution

What is a plant? Green algae are the ancestors of land plants. Examine the diversity of life in the Kingdom Plantae; identify and describe basic morphological characteristics and reproductive strategies of various groups of non-vascular and vascular plants; identify common trees in Hong Kong; Examine the evidence of convergent evolution in plants.

Animal diversity and evolution

What is an animal? Examine the diversity of life in the Kingdom Animalia; identify and describe basic morphological characteristics of various groups of animals (invertebrates and vertebrates) and relate them to adaptations to the environment they are inhabiting (using local examples); examine adaptive radiations of animals and evolutionary relationships among various animal groups.

Reading List**Compulsory Readings**

Title	
1	Campbell N.A. (2020) Biology: A Global Approach. 12th Edition. Pearson.

Additional Readings

Title	
1	Russel P.J., Hertz P.E., McMillan B. (2005) Biology: The Dynamic Science. 5th Edition. Cengage.
2	Online Resources: To be provided, as required, in lectures and tutorials.