THE EDUCATION UNIVERSITY OF HONG KONG

Course Outline

Part I

Programme Title	**:** Bachelor of Education (Honours) (Science)
Programme QF Level	**:** 5
Course Title	**:** Biodiversity
Course Code	**:** SCB2001
Department	**:** Science and Environmental Studies
Credit Points	**:** 3
Contact Hours	**:** 39
Pre-requisite(s)	**:** Nil
Medium of Instruction	**:** English
Course Level	**:** 2

Part II

The University's Graduate Attributes and seven Generic Intended Learning Outcomes (GILOs) represent the attributes of ideal EdUHK graduates and their expected qualities respectively. Learning outcomes work coherently at the University (GILOs), programme (Programme Intended Learning Outcomes) and course (Course Intended Learning Outcomes) levels to achieve the goal of nurturing students with important graduate attributes.

In gist, the Graduate Attributes for Sub-degree, Undergraduate, Taught Postgraduate, Professional Doctorate and Research Postgraduate students consist of the following three domains (i.e. in short "PEER & I"):

- **P**rofessional **E**xcellence;
- **E**thical **R**esponsibility; **&**
- **I**nnovation.

The descriptors under these three domains are different for the three groups of students in order to reflect the respective level of Graduate Attributes.

The seven GILOs are:

1. Problem Solving Skills
2. Critical Thinking Skills
3. Creative Thinking Skills

4a. Oral Communication Skills
4b. Written Communication Skills

5. Social Interaction Skills
6. Ethical Decision Making
7. Global Perspectives

1. **Course Synopsis**

As a foundation course, this module will introduce the fundamental theory of the nature of science. Besides, it provides an introduction to the diversity of plants and animals at the post-secondary level. The major topics include the taxonomy, structure and evolution of vascular plants, non-vascular plant and fungi. The diversity of animal forms and their structure, life cycle, distribution, and economic significance are also the main focus. The laboratory session will equip participants with the ability and skills to examine and identify specimens of representative taxa. Histological examination and dissecting techniques for the preparation of specimens are also included. Complementary practical work and fieldbased learning activities are provided to enable participants to develop the scientific inquiry and identification skills required for their teaching and field visits. This course equips participants with the essential content knowledge and skills to teach topics in biodiversity (either in Biology, Combined Science or Integrated Science) at senior secondary level.

2. **Course Intended Learning Outcomes** ($CILO_s$) *Upon completion of this course, students will be able to:*

$CILO_1$: Describe and explain the fundamental principles of the nature of science;

$CILO_2$: Understand the life cycle, structures and evolution of plants and animals for describing the diversity of different life forms;

$CILO_3$: Apply the knowledge of biological classification and develop skills to analyse numerical data critically from scientific inquiry processes for solving taxonomic and biodiversity issues;

$CILO_4$: Apply the practical skills in histological examination and specimen dissection for biological identification.

3. **Content, CILOs and Teaching & Learning Activities**

Course Content	**CILOs**	**Suggested Teaching & Learning Activities**
<u>Nature of science</u> - Scientific thinking and processes; - Science development in taxonomy and systematics; - Traditional classification and molecular view	$CILO_1$	Lectures, case study and group discussion
- Algae, non-vascular plant and fungi: nutrition and reproduction; - Vascular plants: Taxonomy, structure and evolution	$CILO_{2,3,4}$	Lectures, case study, group discussion, laboratory works (histological examination and specimen dissection) and fieldbased learning activities

- Invertebrates and vertebrates structure, life cycle, distribution, and economic significance	CILO2,3,4	Lectures, case study, group discussion, laboratory works (histological examination and specimen dissection) and fieldbased learning activities

4. Assessment

Assessment Tasks	Weighting (%)	CILO
(a) Individual assignments (20%) and lab assessment (20%)	40%	*CILO1,2,3,4*
(b) Group presentation	10%	*CILO1,2,3,4*
(c) Written examination	50%	*CILO1,2,3,4*

5. Use of Generative AI in Course Assessments

Please select one option only that applies to this course:

Not Permitted: In this course, the use of generative AI tools is not allowed for any assessment tasks.

☑ ***Permitted***: In this course, generative AI tools may be used in some or all assessment tasks. Instructors will provide specific instructions, including any restrictions or additional requirements (e.g., proper acknowledgment, reflective reports), during the first lesson and in relevant assessment briefs.

6. Required Text(s)

Nil

7. Recommended Readings

Brooker, R.J., Widmaier, E.R., Graham, L.E., & Stiling, P.D. (2011) *Biology*. N.Y.: McGraw Hill.

Hawksworth, D.L., & Bull, A.T. (eds.) (2006) *Arthropod Diversity and Conservation*. Dordrecht: SpringerLink.

Hawksworth, D.L., & Bull, A.T. (eds.) (2007) *Vertebrate Conservation and Biodiversity*. Dordrecht: SpringerLink.

Hickman, C.P., Roberts, L., Keen, S., Larson, A. & Eisenhour, D. (2009) *Animal Diversity*. New York: McGraw-Hill.

Judd, W., Campbell, C., Kellogg, E., Stevens, P., & Donoghue, M. (2016). *Plant systematics: A phylogenetic approach* (Fourth ed.)

Kardong, K., & Zalisko, E. (2006). *Comparative vertebrate anatomy: A laboratory dissection guide* (4th ed.). Boston: McGraw-Hill.

Linzet, D.W. (2001) *Vertebrate Biology*. Boston: McGraw-Hill.

Spilsbury, L., & Spilsbury, R. (2008) *Plant Classification (The Life of Plants)*. HeinemannRaintree: Oxford.

Starr, C., Taggart, R., Evers, C., & Starr, L. (2012). *The Unity and Diversity of Life*. Belmont: Brooks/Cole.
Wallace, R.L., & Taylor, W.K. (2002) *Invertebrate Zoology: A Laboratory Manual.* NJ: Prentice Hall.

7. Related Web Resources

Hong Kong Biodiversity
https://www.afcd.gov.hk/english/conservation/hkbiodiversity/hkbiodiversity.html
Species http://www.biologicaldiversity.org/species/index.html Has Centre
http://www.eduhk.hk/has/

8. Related Journals

Nil

9. Academic Honesty

The University upholds the principles of honesty in all areas of academic work. We expect our students to carry out all academic activities honestly and in good faith. Please refer to the *Policy on Academic Honesty, Responsibility and Integrity* (https://www.eduhk.hk/re/uploads/docs/00000000001633679892454 8BbN5). Students should familiarize themselves with the Policy.

10. Others Nil

Last update: July 2025