

LIFS 1010 – Introduction to Biological Sciences

School:	School of Science
Subject Area:	Life Science
Course Credit:	3
Instructor:	AMIN Aftab, KO Ice Wai Ping, KO Robert Kam Ming
Pre-requisite/co-requisite:	Nil

Notes:

- The syllabi provided here is for reference only and may be subject to changes and adjustments as determined by the course instructors.

The Hong Kong University of Science and Technology

LIFS 1010 – Introduction to Biological Sciences (3-credit)

Summer 2025-26

Course Period: 15^h June - 10th July 2026

Monday, Wednesday & Friday | 9:30am-12:50pm | Room 2502 (L25/26)

Exclusions

LIFS 1901, LIFS 1902, Level 3 or above in HKDSE 1/2x Biology OR in HKDSE 1x Biology.

Instructors

Prof. Robert KO (RK), Course Director		Email: bcrko@ust.hk		Room 5534 (L25/26)
Dr. Aftab AMIN (AA)		Email: aftabamin@ust.hk		Room 5462 (L25/26)
Dr. Ice KO (IK)		Email: iceko@ust.hk		Room 5444 (L25/26)

Students are welcome to meet with the instructors if they have any questions about the course. Appointment by email is preferred.

Course Description

This course introduces students to the fundamental concepts and principles of biological sciences, ranging from the chemical basis of life, cell structure and function, genetics and molecular biology, evolution and the origin of life, biodiversity and conservation, ecology and behavioral biology, to the structure and life processes in human. Examples and case studies will be illustrated to enhance students' understanding and application of relevant knowledge. Students without HKDSE qualifications may seek instructor's approval for enrolment.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

- 1) Explain the fundamental principles and inter-relationships among biomolecules, cells, and life activities.
- 2) Describe the origin of life and diversity of life, the genetic basis of evolution, and conservation biology.
- 3) Describe the principles of ecology and behavioral biology.
- 4) Describe the structure and function of organs in humans.
- 5) Apply biological knowledge in explaining current issues relating to the environment and human life.

Assessments (assessing Course ILOs 1-5)

<i>Assessment Task</i>	<i>Coverage</i>	<i>Contribution to Overall Course Grade (%)</i>	<i>Date & Time</i>	<i>Venue</i>
Assignment (Infographic)	Topics to be released	20	Due Jul 17	N/A
Exam I	Lectures 1-4	35	Jun 26 (class slot)	Room 2502
Exam II	Lectures 5-9	45	July 10 (class slot)	Room 2502

Attendance Bonus:

In addition to the exam marks, a bonus mark of 5% will be given to those students who attend **AT LEAST 7 out of 8 lectures scheduled from Jun 17 to Jul 8** (i.e., *excluding* the final lecture for Exam II). This arrangement already includes a buffer to accommodate sick leave or other emergent issues.

A Note on the Examinations

Applications for makeup exam will be considered ONLY if students have any exceptional reasons with supporting documents – reasons including student activities, competitions, study tours, trips, interviews, internships/jobs, etc., will NOT be considered.

Final Grade Descriptors

<i>Grade</i>	<i>Short Description</i>	<i>Elaboration on Subject Grading Description</i>
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter. Displays an excellent motivation to learn.
B	Good Performance	Shows good knowledge and understanding of the main subject matter. Displays a high motivation to learn.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter. Demonstrates an effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter. Possesses the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter. Does not meet the threshold requirements for development in the discipline.

Communication and Feedback

Exam marks will be communicated via Canvas within two weeks of the exam.

Key References

Cunningham W.P., Cunningham M.A. and O'Reilly, C.M. (2023) *Principles of Environmental Science: Inquiry and Applications* (10th edition). McGraw-Hill Companies, Inc.

Mader S.S. and Windelspecht M. (2023) *Human Biology* (17th edition). McGraw-Hill Companies, Inc.

Raven P.H., Johnson G.B., Mason K.A., Losos J.B. and Duncan T. (2020) *Biology* (12th edition). McGraw-Hill Companies, Inc.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Lecture Topics (Tentative)

Lecture	Date	Topic	Instructor
Part 1 – Fundamentals of Life			
1	Jun 15 (Mon) Add/Drop Deadline	<ul style="list-style-type: none"> • Course Introduction (AA) • Characteristics of Life and Living Systems (IK) • The Chemical Basis of Life – From Atoms to Organic Molecules (IK) • The Cell: The Basic Unit of Life (IK) 	AA & IK
Part 2 – The Perpetuation of Life			
2	Jun 17 (Wed)	<ul style="list-style-type: none"> • Briefing on Infographic Assignment • Genetics and DNA • Human Reproduction 	AA
	Jun 19 (Fri)	Public Holiday	
Part 3 – Evolution			
3	Jun 22 (Mon)	<ul style="list-style-type: none"> • The Origin of Species • Evolution 	IK
Part 4 – Biodiversity & Conservation			
4	Jun 24 (Wed)	<ul style="list-style-type: none"> • The Value of Biodiversity • Human Impacts on the Biosphere & Conservation Efforts 	IK
Part 5 – Behavioral Biology			
5	Jun 26 (Fri)	<ul style="list-style-type: none"> • Exam I (AA & IK) • Behavioral Biology – Learning, Animal Cognition, Migration, Animal Communications, Territoriality (IK) 	AA & IK
Part 6 – Human Biology			
6	Jun 29 (Mon)	<ul style="list-style-type: none"> • The Nervous System • Heart and Circulation 	AA
	Jul 1 (Wed)	Public Holiday	
7	Jul 3 (Fri)	<ul style="list-style-type: none"> • Lungs and Breathing • Kidney and Excretion 	AA
8	Jul 6 (Mon)	<ul style="list-style-type: none"> • The Digestive System • The Immune System 	AA
9	Jul 8 (Wed)	<ul style="list-style-type: none"> • Living Healthier by Using Chinese Herbs • Why We Age: From Chinese Medicine and Modern Medicine Perspectives 	RK
10	Jul 10 (Fri)	<ul style="list-style-type: none"> • Exam II 	RK, AA & IK