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)

Fall 2025-26

Tuesday & Thursday | 1:30pm-2:50pm | Room 5403 (L17/18)

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)

Assessment Task	*Coverage*	*Contribution to Overall Course Grade (%)*	*Date & Time*	*Venue*
Assignment (Infographic)	Topics to be released	20	Due Dec 2	N/A
Exam I	Lectures 1-11	35	Oct 14 (class slot)	Room 5403
Exam II	Lectures 13-25	45	To be determined	To be determined

Attendance Bonus:
In addition to the exam marks, a bonus mark of 5% will be given to those students who attend AT LEAST 80% of the lectures from Sep 16 to Nov 27 (i.e., 16 out of 20 lectures). Please note that the lecture for 'Exam I' is NOT included in the calculation of attendance. The requirement (minimum 80% attendance) already includes some buffer in case of sick leave and any 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 – in general, reasons including student activities, competitions, study tours, trips, interviews, internships/jobs, etc., will NOT be considered.

Final Grade Descriptors

Grade	*Short Description*	*Elaboration on Subject Grading Description*
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 corresponding 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	Sep 2 (Tue)	• Course Introduction (AA) • Characteristics of Life and Living Systems (IK)	AA & IK
2	Sep 4 (Thu)	The Chemical Basis of Life – From Atoms to Organic Molecules	IK
3	Sep 9 (Tue)	The Cell: The Basic Unit of Life	IK
Part 2 – The Perpetuation of Life			
4	Sep 11 (Thu)	Genetics and DNA	AA
	Sep 13 (Sat)	*Course Add/Drop Deadline*	
5	Sep 16 (Tue)	• What Makes a Good Infographic – Guidelines & Rubrics • Human Reproduction	AA
Part 3 – Evolution			
6	Sep 18 (Thu)	The Origin of Species (I)	IK
7	Sep 23 (Tue)	The Origin of Species (II)	IK
8	Sep 25 (Thu)	Evolution	IK
Part 4 – Biodiversity & Conservation			
9	Sep 30 (Tue)	The Value of Biodiversity (I)	IK
10	Oct 2 (Thu)	The Value of Biodiversity (II)	IK
	Oct 7 (Tue)	*Public Holiday*	IK
11	Oct 9 (Thu)	Human Impacts on the Biosphere	IK
Part 5 – Ecology & Behavioral Biology			
12	**Oct 14 (Tue)**	**Exam I**	AA & IK
13	Oct 16 (Thu)	Species Interactions (I)	IK
14	Oct 21 (Tue)	Species Interactions (II)	IK
15	Oct 23 (Thu)	Behavioral Biology (I)	IK
16	Oct 28 (Tue)	Behavioral Biology (II)	IK
Part 6 – Human Biology			
17	Oct 30 (Thu)	The Nervous System	AA
18	Nov 4 (Tue)	Heart and Circulation	AA
19	Nov 6 (Thu)	Lungs and Breathing	AA
20	Nov 11 (Tue)	Kidney and Excretion	AA
21	Nov 13 (Thu)	The Digestive System	AA
22	Nov 18 (Tue)	The Immune System	AA
23	Nov 20 (Thu)	Review of Human Biology	AA
24	Nov 25 (Tue)	Living Healthier by Using Chinese Herbs	RK
25	Nov 27 (Thu)	Why We Age: From Chinese Medicine and Modern Medicine Perspectives	RK