

Course Syllabus

1. Course Number	2303101
2. Course Credit	3
3. Course Title	General Biology
4. Department/ Faculty	Department of Biology, Faculty of Science
5. Semester	First Semester
6. Academic Year	2021
7. Instructor/ Academic Staff	Assoc. Prof. Dr. Chatchawan Chaisuekul Assist. Prof. Dr. Noppadon Kitana Assist. Prof. Dr. Nipada Ruankaew Disyatat* Assist. Prof. Dr. Pongchai Dumrongrojwatthana Assist. Prof. Dr. Sittiporn Pattaradilokrat Dr. Pataradawn Pinyopich (*Coordinator; Email: Nipada.R@Chula.ac.th)
8. Condition	
8.1 Pre-requisite	-
8.2 Corequisite	-
8.3 Cocurrent	-
9. Type of Course	Required Course
10. Program	Bachelor of Science in Biotechnology (International Program)
11. Degree	Bachelor
12. Hours per week	3 hours/week Mon 09:00 – 10:00 Online Wed 10:00 – 12:00 Online (*make-up class will be held on Tue 08:00-109:00)

13. Course Description (as listed in the program)

Biological principles; chemical basis of life; modern cell concepts; structural organization in relations of organisms; material and energy processes including regulatory mechanisms; cell cycle & genetics; maintenance the homeostasis of life; continuity of life through inheritance; reproduction; development and evolution; biological diversity; life responses to environmental changes; biological applications pertaining development of human society in the future.

14. Course Outline

14.1 Objective

Students can explain basic biology knowledge and roles of biology in their daily life.

14.2 Learning content:

Unit 1: Introduction **1 Hour**

Unit 2: Chemistry of Life, Energy transformation and Cell **8 Hours**

- Chemistry of Life
- Cell structures and functions
- Membrane and transport across membrane
- Animal Tissue
- Energy & Metabolism

Unit 3: Genetics **5 Hours**

- Cell reproduction
- Mendelian Genetics & Molecular Genetics

Unit 4: Maintenance of life **9 Hours**

- Nutrition
- Circulation and gas exchange
- Immune system
- Control the internal environments
- Hormones
- Nervous systems
- Sensory and motor mechanisms

Unit 5: Reproduction & Development **4 Hours**

- Reproductive physiology
- Animal Development

Unit 6: Evolution & Diversity of Life **5+5 Hours**

- Concepts, theory and evidence
- Population genetics
- Microevolution
- Macroevolution
- Phylogenetics
- Biological diversity
- Principles of taxonomy
- Five major Kingdoms + Virus

Unit 7: Ecology and Behavior

6 Hours

- Population Ecology
- Community Ecology
- Ecosystem
- Behavior

Unit 8: Applications

2 Hours

14.3 Type of Instruction

Lecture

14.4 Media

PowerPoint media

Electronics and website media

Supplement sheets

14.5 Evaluation/ Grading

- Assessment of academic knowledge
 - Midterm exam 40%
 - Final exam 40%
- Homework & assignments 20%

Remarks: Minimum passing grade is 50%

15. Reading List

15.1 Required Text

- Reece J. B., Urry L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., and Jackson, R. B. (2014). Campbell Biology 10th edition. Benjamin Cummings Publishing company, Inc. New York.
- Raven, P., Johnson, G., Mason, K., Losos, J. and Duncan, T. (2020). Biology. 12th Edition. McGraw-Hill Education. New York.

16. Teacher Evaluation

16.1 Form Type 4: Lecture

16.2 Changes made in accordance with the previous evaluation

: Adjustments in teaching media

16.3 Discussion or analysis which creates desirable qualifications of Chulalongkorn University graduates.

: Intellect and academic knowledge, ethics, and social responsibility

Course schedule of 2303101

Week	Day	Date	Time	Topic (hours)	Instructor
1	Mon	9-Aug-21	09.00-10.00	Introduction	Nipada
	Wed	11-Aug-21	10.00-11.00	Molecules & Cell (1)	Sittiporn
	11.00-12.00		Molecules & Cell (2)		
2	Mon	16-Aug-21	09.00-10.00	Molecules & Cell (3)	
	Wed	18-Aug-21	10.00-11.00	Molecules & Cell (4)	
	11.00-12.00		Molecules & Cell (5)		
3	Mon	23-Aug-21	09.00-10.00	Molecules & Cell (6)	
	Wed	25-Aug-21	10.00-11.00	Molecules & Cell (7)	
	11.00-12.00		Molecules & Cell (8)		
4	Mon	30-Aug-21	09.00-10.00	Cell Cycle & Genetics (1)	Pataradawn
	Wed	1-Sep-21	10.00-11.00	Cell Cycle & Genetics (2)	
	11.00-12.00		Cell Cycle & Genetics (3)		
5	Mon	6-Sep-21	09.00-10.00	Cell Cycle & Genetics (4)	Noppadon
	Wed	8-Sep-21	10.00-11.00	Cell Cycle & Genetics (5)	
	11.00-12.00		Animal Physiology (1)		
6	Mon	13-Sep-21	08.00-09.00*	Animal Physiology (2)*	
			09.00-10.00	Animal Physiology (3)	
	Wed	15-Sep-21	10.00-11.00	Animal Physiology (4)	
	11.00-12.00		Animal Physiology (5)		
7	Mon	20-Sep-21	08.00-09.00*	Animal Physiology (6)*	
			09.00-10.00	Animal Physiology (7)	
	Wed	22-Sep-21	10.00-11.00	Animal Physiology (8)	
	11.00-12.00		Animal Physiology (9)		
8	Mon	27-Sep-21	09.00-12.00	Midterm Exam	
	Wed	29-Sep-21		<i>No class</i>	
9	Mon	4-Oct-21	09.00-10.00	Reproduction & Dev (1)	Pataradawn
	Wed	6-Oct-21	10.00-11.00	Reproduction & Dev (2)	
	11.00-12.00		Reproduction & Dev (3)		
10	Mon	11-Oct-21	09.00-10.00	Reproduction & Dev (4)	
	Wed	13-Oct-21		<i>No class (King Rama IX Memorial Day)</i>	
11	Mon	18-Oct-21	09.00-10.00	Evolution (1)	Chatchawan C
	Wed	20-Oct-21	10.00-11.00	Evolution (2)	
	11.00-12.00		Evolution (3)		
12	Mon	25-Oct-21	09.00-10.00	Evolution (4)	
	Wed	27-Oct-21	10.00-11.00	Evolution (5)	
	11.00-12.00		Diversity of Animals (1)		
13	Mon	1-Nov-21	09.00-10.00	Diversity of Animals (2)	Chatchawan C
	Wed	3-Nov-21	10.00-11.00	Diversity of Animals (3)	
	11.00-12.00		Diversity of Animals (4)		
14	Mon	8-Nov-21	09.00-10.00	Diversity of Animals (5)	
	Wed	10-Nov-21	10.00-11.00	Ecology (1)	Nipada
	11.00-12.00		Ecology (2)		

Week	Day	Date	Time	Topic (hours)	Instructor
15	Mon	15-Nov-21	09.00-10.00	Ecology (3)	Nipada
	Wed	17-Nov-21	10.00-11.00	Ecology (4)	
			11.00-12.00	Ecology (5)	
16	Mon	15-Nov-21	09.00-10.00	Ecology (6)	Pongchai D
	Wed	17-Nov-21	10.00-11.00	Application (1)	
			11.00-12.00	Application (2)	
17	Mon	29-Nov-21	09.00-11.00	Final Exam	

Notes: Total of 45 hours, including 2 makeup classes.
 *substitutes for King Rama IX Memorial Day