Introduction to Biology

Global Program on Economics and Finance (2021 Fall)

Course Title	Introduction to Biology		
Credit	3	**Credit Hours**	48 credit hours
Course Objectives	This course will introduce students to key concepts in modern biology, including breakthrough research advances in biochemistry, cell biology, genetics, developmental biology, physiology and ecology. Lectures will highlight basic knowledge of biological processes that form the basis of animal behavior, plant physiology and human diseases.		
Course Description	*Although biologists know a great deal about life on Earth, many mysteries remain. For instance, what processes led to the origin of flowering among plants? Posing questions about the living world and seeking answers through scientific inquiry are the central activities of* ***biology****, the scientific study of life. Biologists' questions can be ambitious. They may ask how a single tiny cell becomes a tree or a dog, how the human mind works, or how the different forms of life in a forest interact. Many interesting questions probably occur to you when you are out-of-doors, surrounded by the natural world. When they do, you are already thinking like a biologist. More than anything else, biology is a quest, an ongoing inquiry about the nature of life. The living world is wondrously varied. How do biologists make sense of this diversity and complexity?* – Above are quotes from Campbell Biology 10th edition (2013), highlight what I will lecture and what we will discuss in the course.		

Course Requirements:
Prerequisites: pass high school graduation qualification test (biology)

Teaching Methods:
Lecture

Course Schedule

EACH WEEK, TUESDAY, 9:00-12:30

9/7/2021	The origin of life, biomacromolecules
9/14/2021	The structure of a cell
~~9/21/2021~~	Break, Mid-Autumn Festival
9/28/2021	Cell cycle and cellular communication

~~10/5/2021~~	Break, National Day of the PRC
10/12/2021	Energy metabolism
10/19/2021	Classical genetics
10/26/2021	Molecular genetics
11/2/2021	Genetic engineering
11/9/2021	Plant kingdom
11/16/2021	Animal kingdom
11/23/2021	Immunology and neuroscience
11/30/2021	Ecosystem
12/7/2021	Final exam and learning reflection

The design of class discussion or exercise, practice, experience and so on:

At the start of the semester, students will be randomly grouped, preferably 3 or 4 students per group. In the class, after the instructor outlines a question, students will be given time to discuss and present their answers on whiteboards. Then, the instructor will comment on the answers before continuing to lecture. On average, every 20-minute lecturing will be followed by a 5-minute group discussion.

Grading & Evaluation:

3 Homework, each 100 points
Final exam, closed book and no notes or other reference can be used (December 7), 200 points
Total points: 500

Teaching Materials & References:

Select chapters in Campbell Biology 10th edition (2013)