

Fall 2016

## LIFS 1010: APPRECIATION OF BIOLOGICAL SCIENCE

**Course goal:** This course aims to introduce to students diversity of life forms; origin of life; chemical basis of life; cell structure and function; genetics and molecular biology; structure and life processes in animal and plants; evolution; ecology and environment.

### Intended learning outcomes:

1. Explain fundamental principles and inter-relationship among biochemicals, cells, and life.
2. Describe the process of evolution and its implication in biodiversity.
3. Describe the structure and life processes in human.
4. Explain the inter-relationship between organisms and the environment.
5. Apply the biological knowledge in explaining current issues relating to human life.

**Text Book:** Life, sixth ed. by Lewis, Parker, Gaffin, and Hoefnagels. (2007) McGraw Hill

**Entry Levels:** The course is designed for non-biology major students who are interested in learning about the biology related to the human body functions and the rest of the world.

**Course format:** Two 80 minutes lecture per week. Grades will be based on the results of one midterm examination (50%) and one final examination (50%).

Lecture time/venue:

Monday 12:00 – 13:20 Rm4619  
Friday 12:00 – 13:20 Rm4619

| Instructors             | Room | Tel.  | Email           |
|-------------------------|------|-------|-----------------|
| Prof. Andrew L. Miller* | 5453 | x8631 | almiller@ust.hk |
| Prof. Zhenguo Wu        | 5527 | x8704 | bczgwu@ust.hk   |
| Dr. Melody Leung        | 5450 | x8634 | bomleung@ust.hk |

\*Course Director

| DATE          | TOPIC                                  | LECTURER |
|---------------|--|----------|
|               | <b>Fundamentals of life</b>            | Wu       |
| Sept 5, 7     | Atoms, molecules, and life's chemistry |          |
| Sept 12, 14   | The cell: basic unit of life           |          |
|               | <b>The perpetuation of life</b>        | Wu       |
| Sept 19, 21   | Cell cycle and Meiosis                 |          |
| Sept 26, 28   | Chromosomes and DNA                    |          |
|               | <b>Evolution</b>                       | Leung    |
| Oct 3         | Darwinian evolution theory             |          |
|               | Evidence for evolution                 |          |
| Oct 5         | Microevolution                         |          |
|               | Macroevolution                         |          |
|               | Origin and history of life             |          |
| <b>Oct 12</b> | <b>MIDTERM EXAMINATION: LT-H</b>       |          |
|               | <b>Diversity of Life</b>               | Leung    |
| Oct 17        | Viruses and prokaryotes                |          |

|                   |   |        |
|-------------------|---|--------|
| Oct 19            | Protists  |        |
| Oct 24            | Fungi and plants  |        |
| Oct 26            | Invertebrates and chordates                                       |        |
|                   | <b>Ecology</b>  | Leung  |
| Oct 31            | Population dynamics   |        |
| Nov 2             | Community   |        |
| Nov 7             | Ecosystems and the Biosphere                                      |        |
| Nov 9             | Environmental challenges  |        |
|                   | <b>Human biology</b>  | Miller |
| Nov 14            | The nervous system  |        |
| Nov 16            | Senses and the brain  |        |
| Nov 21            | Muscles and movement  |        |
| Nov 23            | Heart and circulation   | Miller |
| Nov 28            | Lungs and breathing   |        |
| Nov 30            | Kidney and excretion  |        |
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| <b>Dec 1 - 6</b>  | <b>Study Break</b>  |        |
| <b>Dec 7 - 19</b> | <b>FALL TERM EXAMS: END OF TERM EXAM (to be arranged by ARRO)</b> |        |