**Division of Life Science**
**The Hong Kong University of Science and Technology**

# LIFS 2080 Plant Biology

Spring semester, 2023
Credits: 3 **(2 lectures + 1 tutorial**)
Pre-requisites: LIFS 2210 or LIFS 2040

Course coordinator: Prof. Ning Li
Instructors: Prof. Ning Li, Dr. Amy Li

## Course goals

This is a core lecture course accompanied by the practical course LIFS 2280 to provide students with a preliminary understanding of the basic cellular structures, molecular mechanisms and physiological processes during plant growth, development and reproduction. The course is also to provide students with current research topics on plant biotechnology.

## Reference books

1. Biology of Plants by Raven et al.

## Assessment scheme

| Components | Percentage |
|---|---|
| A. Mid-term Examination | 50 |
| B. Final Examination | 50 |

## Teaching Schedule

**L1**

Lectures

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|---|---|
| Monday | 12:00 -12:50 |
| Wednesday | 12:00 -12:50 |
| Friday | 12:00 -12:50 |

**L2**

Lectures

| | |
|---|---|
| Monday | 13:00-13:50 |
| Wednesday | 13:00-13:50 |
| Friday | 13:00-13:50 |

**Course Outline**

| Week | Date | Topic | Instructor |
|---|---|---|---|
| 1 | 3 Feb (Fri) | Course introduction | AL |
| | 6 Feb (Mon) | Agriculture, food and human | NL |
| | 8 Feb (Wed) | Plant cellular structure and chemical composition 1 | NL |
| | 10 Feb (Fri) | Plant cellular structure and chemical composition 2 | NL |
| 2 | 13 Feb (Mon) | Tutorial | NL |
| | 15 Feb (Wed) | Energy and respiration 1 | AL |
| | 17 Feb (Fri) | Energy and respiration 2; Photosynthesis 1 | AL |
| 3 | 20 Feb (Mon) | Tutorial | AL |
| | 22 Feb (Wed) | Photosynthesis 2 | AL |
| | 24 Feb (Fri) | Plant classification | AL |
| 4 | 27 Feb (Mon) | Tutorial | AL |
| | 1 Mar (Wed) | Plant tissues and growth 1 | AL |
| | 3 Mar (Fri) | Plant tissues and growth 2 | AL |
| 5 | 6 Mar (Mon) | Tutorial | AL |
| | 8 Mar (Wed) | Movement of water and solutes | AL |
| | 10 Mar (Fri) | Plant defense | AL |
| 6 | 13 Mar (Mon) | Review for the Mid-term Exam | AL |
| | 15 Mar (Wed) | Review for the Mid-term Exam | NL |
| | **17 Mar (Fri)** | **Mid-term exam*** | **NL & AL** |
| 7 | 20 Mar (Mon) | Introduction to flowering plants | NL |
| | 22 Mar (Wed) | Reproduction of plant and development of seeds | NL |
| | 24 Mar (Fri) | Tutorial | NL |
| 8 | 27 Mar (Mon) | Hormonal physiology 1 | NL |
| | 29 Mar (Wed) | Hormonal physiology 2 | NL |

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|---|---|---|---|
| | 31 Mar (Fri) | Tutorial | NL |
| 9 | 3 Apr (Mon) | Hormonal physiology 3 | NL |
| | 12 Apr (Wed) | Hormonal physiology 4 | NL |
| | 14 Apr (Fri) | Tutorial | NL |
| 10 | 17 Apr (Mon) | Plant response to environmental stimuli 1 | NL |
| | 19 Apr (Wed) | Plant response to environmental stimuli 2 | NL |
| | 21 Apr (Fri) | Tutorial | NL |
| 11 | 24 Apr (Mon) | Plant cell signaling 1 | NL |
| | 26 Apr (Wed) | Plant cell signaling 2 | NL |
| | 28 Apr (Fri) | Tutorial | NL |
| 12 | 3 May (Wed) | Plant molecular biotechnology 1 | NL |
| | 5 May (Fri) | Plant molecular biotechnology 2 | NL |
| 13 | 8 May (Mon) | Review for the Final Exam | NL |
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| | **TBC** | **Final exam** | **NL** |
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