

LIFS2280 Plant Biology Laboratory
Course Outline - Spring 2018

1. Instructor

Name: Melody K.W. Leung

Contact Details: Ext. x8634; Rm 5450; bomleung@ust.hk

2. Teaching Assistants

Name & Contact Details:

3. Meeting Time and Venue

Lab session:

Date / Time / Venue: Fridays 12:00-14:50 @ Teaching Lab Rm 4160

Tutorials:

Date / Time / Venue: Friday 11:00-11:50 @ Rm4620

Monday 9:30-10:20 @ Rm1104

4. Course Description

Credit Points: 3

This laboratory course is designed to allow students to have hands-on experience on techniques commonly used in plant biology researches. The theoretical principles underlying the techniques involved in this course will be covered in laboratory manual and explained in the pre-lab tutorials. The manual also includes step-by-step instructions for carrying out the experiments and writing lab reports. Obtained results and problems related to each of the experiment will be discussed in the post-lab tutorials.

5. Intended Learning Outcomes

On successful completion of this course, students are expected to be able to:

1. Practice key research techniques used in plant biology.
2. Qualitatively and quantitatively analyze data and apply plant biology knowledge to interpret the results.
3. Communicate scientifically in the form of reports and proposal.
4. Follow instructions and work effectively in a team to accomplish plant biology research tasks.

6. Assessment Scheme

- a. Assignment & Lab reports (50%)
- b. Lab performance (10%)
- c. Examination (40%)

<u>Assessment</u>	<u>Assessing Course ILOs</u>
Assignment & Lab reports	1, 2
Lab performance	3
Examination	1, 2

Keyword Syllabus:

- Plant structure: Cells and tissues of the plant body. Shoot and root architecture.
- Energy: Photosynthesis and respiration. Carbon cycle.
- Development: Primary and secondary development. Phytohormones and growth regulation. Gravitropism.
- Genetics: Reporter gene expression and regulation.

Weekly Schedule

Date (2019)	Time / Venue	Topic
15 th Feb (Fri)	11:00-11:50	Introduction & Briefing on Assignment
22 nd Feb (Fri)	11:00-11:50	Pre-lab tutorial 1
22 nd Feb (Fri)	12:00-14:50 Rm 4160	Lab 1. Plant Structure
25 th Feb (Mon)		Post-lab tutorial 1
8 th Mar (Fri)	11:00-11:50	Pre-lab tutorial 2
8 th Mar (Fri)	12:00-14:50 Rm 4160	Lab 2. Photosynthesis and Respiration Lab 1 report submission
11 th Mar (Mon)		Post-lab tutorial 2
15 th Mar (Fri)	11:00-11:50	Pre-lab tutorial 3
15 th Mar (Fri)	12:00-14:50 Rm 4160	Lab 3. Plant growth and Development
22 nd Mar (Fri)	12:00-14:50 Rm 4160	Lab 3. Plant growth and Development follow-up Lab 2 report submission Post-lab tutorial 3

29 th Mar (Fri)	11:00-11:50	Pre-lab tutorial 4
29 th Mar (Fri)	12:00-14:50 Rm 4160	Lab 4. Plant tissue cloning – medium preparation
12 th Apr (Fri)	12:00-14:50 Rm 4160	Lab 4. Plant tissue cloning – tissues preparation Lab 3 report submission Post-lab tutorial 4
26 th Apr (Fri)	12:00-14:50 Rm 4160	Lab 4. Plant tissue cloning follow up Lab 4 report submission *In-class*
To be announced	Final Exam	