

LIFS2280 Plant Biology Laboratory
Course Outline - Spring 2021

1. Instructor

Name: Melody K.W. Leung

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

2. Teaching Assistants

Name & Contact Details:

XU Yingjie	yxudw@connect.ust.hk
CHEN Yanxian	ychenhe@connect.ust.hk
WANG Tingxuan	twangca@connect.ust.hk
YIP Chi Ching Yuki	ccyyp@connect.ust.hk
KIM Sehong	skimbo@connect.ust.hk

3. Meeting Time and Venue

Lab session:

Date / Time / Venue: Fridays 13:00-15:50 @ Teaching Lab Rm 4160

Tutorials:

Date / Time / Venue: Friday 12:00-12:50 @ Rm 1104 / Teaching Lab Rm 4160

Monday 13:30-14:20 @ Rm 1104

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 research. 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. Written Assignment x1 (15%)
- b. Lab Reports x4 (15% each = 60%)
- c. Examination (25%)

<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 (2022)	Time / Venue	Topic
21 st Feb (Mon)	Rm 1104 12:00-12:50	Introduction to the course
25 th Feb (Fri)	12:00-12:50 Teaching Lab Rm 4160 *	Lab 1. Plant structures. Pre-lab Tutorial.
	13:00-15:50 Teaching Lab Rm 4160	Lab 1. Plant structures. Practical.
28 th Feb (Mon)	Rm 1104 13:30-14:20	Lab 1. Plant Structure. Post-lab Tutorial.
11 th Mar (Fri)		Lab 1 Report Submission @ Canvas
11 th Mar (Fri)	12:00-12:50 Teaching Lab Rm 4160 *	Lab 2. Photosynthesis. Pre-lab Tutorial.
	13:00-15:50 Teaching Lab Rm 4160	Lab 2. Photosynthesis. Practical.
14 th Mar (Mon)	Rm 1104 13:30-14:20	Lab 2. Photosynthesis. Post-lab Tutorial.
25 th Mar (Fri)		Lab 1 Report Submission @ Canvas

25 th Mar (Fri)	12:00-12:50 Teaching Lab Rm 4160 *	Lab 3. Plant hormones. Pre-lab Tutorial.
	13:00-15:50 Teaching Lab Rm 4160	Lab 3. Plant hormones. Practical.
1 st Apr (Fri)	13:00-15:50 Teaching Lab Rm 4160	Lab 3. Plant hormones. Follow-up + Post-lab Tutorial.
8 th Apr (Fri)		Lab 3 Report Submission @ Canvas
22 nd Apr (Fri)	12:00-12:50 Teaching Lab Rm 4160 *	Lab 4. Plant enzymes. Pre-lab Tutorial.
	13:00-15:50 Teaching Lab Rm 4160	Lab 4. Plant enzymes. Practical.
25 th Apr (Mon)	13:00-15:50 Teaching Lab Rm 4160	Lab 4. Plant enzymes. Post-lab Tutorial.
6 th May (Fri)		Lab 4 Report Submission @ Canvas
To be announced	Final Exam	

• Attendance to ALL the practical sessions is compulsory!