

LIFS2280 Plant Biology Laboratory

Course Outline - Spring 2018

1. Instructor

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2. Teaching Assistants

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3. Meeting Time and Venue

Lab session:

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

Tutorials:

Date / Time / Venue: Mondays 13:30-14:20 @ Classroom Rm 1104

Fridays 12:00-12:50 @ Classroom Rm 2306

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	Time / Venue	Topic
12 th Feb (Mon)	13:30-14:20 Rm 1104	Introduction
23 rd Feb (Fri)	12:00-12:50 Rm 2306	Pre-lab tutorial 1
23 rd Mar (Fri)	13:00-15:50 Rm 4160	Lab 1. Plant Structure
26 th Feb (Mon)	13:30-14:20 Rm 1104	Post-lab tutorial 1
9 th Mar (Fri)	12:00-12:50 Rm 2306	Pre-lab tutorial 2
9 th Mar (Fri)	13:00-15:50 Rm 4160	Lab 2. Photosynthesis and Respiration Lab 1 report submission
12 th Mar (Mon)	13:30-14:20 Rm 1104	Post-lab tutorial 2
23 rd Mar (Fri)	09:00-17:30	Lab 2 report submission @ Dropbox
6 th Apr (Fri)	12:00-12:50 Rm 2306	Pre-lab tutorial 3
6 th Apr (Fri)	13:00-15:50 Rm 4160	Lab 3. Plant growth and Development

13 th Apr (Fri)	13:00-15:50 Rm 4160	Lab 3. Plant growth and Development follow-up Post-lab tutorial 3
27 th Apr (Fri)	12:00-12:50 Rm 2306	Pre-lab tutorial 4
27 th Apr (Fri)	13:00-15:50 Rm 4160	Lab 4. Effect of Touch on Plants Lab 3 report submission
4 th May (Fri)	13:00-15:50 Rm 4160	Lab 4. Effect of touch on plants follow-up Post-lab tutorial 4
16 th May (Wed)	09:00-17:30	Lab 4 report submission @ Dropbox
To be announced	Final Exam	