MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

SUBJECT OUTLINE DETAILS

1. Subject: Plant physiology Lab.

- **Code:** CS466C
- **Credits: 1**
- **Hours:** 30 practical hours

2. Management Unit:

- Department of Molecular Biotechnology
- Biotechnology Research and Development Institute

3. Prerequisites: Biochemistry I & II (BC461C & BC462C), plant physiology (BC465C)

4. Subject objectives:

After finishing the course in plant physiology lab., the students will achieve the expected learning outcomes:

4.1. Knowledge:

After completing this course, the students were expected to gain knowledge about:

4.1.1. The practical knowledge in plant physiology of plant cell physiology, water and plant, photosynthesis, plant respiration, mineral nutrient of plant and plant growth regulators.

4.1.2. Models of plant physiology experiment.

4.2. Skills:

4.2.1. Students will be trained to get advance knowledges, practical skills, professional skills, teamwork skills, data analysis and scientific report in plant physiology.

4.2.2. Students can design, implement, analyze and evaluate experiments.

4.2.3. Using simple and modern equipments.

4.3. Attitude:

4.3.1. Students should have the good attitudes in laboratories.

4.3.2. Students should be developed attitudes relevant to the application of plant physiology knowledge in practical.

4.3.3. Students must have a positively sense in their self-learning.

5. Brief description of subject content:

This course provides the practical knowledge in plant physiology. The students will practise to understand about plant cell physiology, water and plant, photosynthesis,

plant respiration, mineral nutrient of plant and plant growth regulators. The effect of factors on plant growth and development will be examined. Data collection and data analysis will be guided. The students will also be explained to use simple and modern equipments in laboratories.

6. Subject content structure:

	Content	Hours	Objectives
Experiment 1.	Some characteristics of plant cell physiology	5	4.1, 4.2, 4.3
Experiment 2.	Water and plant	5	4.1, 4.2, 4.3
Experiment 3.	Photosynthesis	5	4.1, 4.2, 4.3
Experiment 4.	Plant respiration	5	4.1, 4.2, 4.3
Experiment 5.	Mineral nutrient of plant	5	4.1, 4.2, 4.3
Experiment 6.	Plant growthregulators	5	4.1, 4.2, 4.3

7. Teaching method:

- Teaching theories and practicals in laboratory
- Group and individual practicals
- Group discussion
- Tests/ reports

8. Duties of student:

Students have to do the following duties:

- Attending 100 % hours in laboratory
- Participate in group and individual assignments
- Doing the tests/ reports
- Proactively implementing self-study
- On duty

9. Assessment of student learning outcomes:

9.1. Assessment

No.	Point components	Rules and Requirement	Weights	Objectives
1	Overall attendance	- 100 % hours in laboratory	Requirement	4.3
2	Group/individual assignments	- Carry out the experiments	20%	4.1, 4.2, 4.3
	Group reports	- Writing the group report for every experiment	35%	4.1, 4.2
3	Tests	- Taking the quick tests	45%	4.1, 4.2

9.2. Grading

- Grading components, reports and test scores will be marked on a scale of 10 (0 to 10), rounded to one decimal place.
- Subject score is the sum of all the components of the evaluation multiplied by the corresponding weight. The subject score is marked on a scale of 10 and rounded to one decimal place then is converted to A-B-C-D-F score and score on a scale of 4 under the academic provisions of Cantho University.

10. Materials:

Materials information	Code number
[1] Hand-out	Students are received hand-out in class
[2] Bùi Trang Việt ... [et al]. 2002. Plant physiology experiments. Vietnam National University Ho Chi Minh City. (Vietnamese)	571.2/ Th552
[3] Frank B Salisbury, Cleon W Ross. 1991. Plant physiology. Belmont, California: Wadsworth.	581.1/ S167
[4] Le Van Hoa, Pham Phuoc Nhan. 2005. Hanbook of Plant physiology experiments. Cantho University (Vietnamese)	571.2/ H401

11. Self-study Guide:

Week	Content	Theory (hours)	Practice (hours)	Students' duties
1	**Experiment 1.** Some characteristics of plant cell physiology	0	5	- Previous research and reference: +References/materials: Experiment 1, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports
2	**Experiment 2**. Water and plant	0	5	Previous research and reference: +References/materials: Experiment 2, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports
3	**Experiment 3.** Photosynthesis	0	5	Previous research and reference: +References/materials: Experiment 3, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports - Tests
4	**Experiment 4**. Plant respiration	0	5	Previous research and reference: +References/materials: Experiment 4, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports
5	**Experiment 5.** Mineral nutrient of plant	0	5	Previous research and reference: +References/materials: Experiment 5, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports - Tests
6	**Experiment 6.** Plant growthregulators	0	5	Previous research and reference: +References/materials:

				Experiment 6, [1], [2], [3], [4] - Group and individual practicals - Group discussion - Group reports

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ON BEHALF OF RECTOR
DEAN/ DIRECTOR

HEAD OF DEPARTMENT