MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

SUBJECT OUTLINE DETAILS

1. Subject: Genomics and Its Application Lab.

- **Code:** BT302C
- **Credits:** 01
- **Hours:** Laboratory practice: 30 periods.

2. Management Unit:

- **Department :** Molecular Biotechnology
- **Faculty/School/Institute/Center/Department:** Biotechnology Research and Development Institute

3. Prerequisites: BT301C

4. Subject objectives:

4.1. Knowledge:

4.1.1. Students know how to apply theoretical knowledge to interpret the results obtained in practicing

4.1.2. Students get strongly understands the theoretical knowledge through practical

4.2. Skill:

4.2.1. Students perform basic techniques in the laboratory, keep safely for working in lab condition (wear gloves, masks…)

4.2.2. Students know how to use equipment in laboratory (PCR machine, autoclave, optical density machine …)

4.2.3. How to prepare chemical solution for experiments.

4.3. Attitude:

4.3.1. Students must be confidence and perform experiments independently

4.3.2. Students can carry out experiments by themselves.

5. Brief description of subject content:

This course guides students how to do some experiment about molecular biology such as DNA extraction, testing DNA, electrophoresis, reading optical density, amplification target gene (doing PCR technique)….

6. Subject content structure:

	Contents	Periods	Objectives
Lession 1	DNA EXTRACTION AND DNA TESTING 1. DNA extraction	10	4.1; 4.2; 4.3

	2. Testing DNA by optical density 3. Dilution DNA to optimal concentration		
Lesson 2	USING RANDOM AMPLIFIED POLYMORPHIC DNA (RAPD) MARKERS TO ANALYSIS PLANT GENOME 1. PCR execution by RAPD primers 2. Testing PCR product by electrophoresis 3. Analysis the results by NTSYS software	10	4.1; 4.2; 4.3
Lesson 3	USING SIMPLE SEQUENCE REPEAT (SSR) MARKER TO ANALYSIS DIVERSITY OF PLANT 1. Amplify sequence repeat DNA by specific primers 2. Testing PCR product by electrophoresis 3. Analysis the results by NTSYS software 4. Detection the genetic diversity of plant group	10	4.1; 4.2; 4.3

7. Method:

Students have to practise themselve

8. Duties of student:

Students have to do the following duties:

+ Laboratory practice (100%)
+ Report and presentation in group

9. Assessment of student learning outcomes:

9.1. Assessment

No.	Point components	Rules and Requirement	Weights	Objectives
1	Report and presentation	+ Class attendance (100%) + Report and presentation	80%	4.2; 4.3
2	Test	Multiple choice	20%	4.1

9.2. Grading

- Grading components and final 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 score and score on a scale of 4 under the academic provisions of the University.

10. Materials:

Materials information	Code number

[1] Molecular cloning : A laboratory manual- Vol.1 / Jpseph Sambrook and David W. Russell.- 3rd.- New York: Cold Spring Harbor Laboratory Press, 2001.- 1v., 27 cm, 0879695773.- 527.8/ S187/Vol.1 . TS.000779

Arrangement: 527.8/ S187/Vol.1 MFN: 67842

[2] Basic Laboratory method for Biotechnology Texbook and Laboratory reference / LISA A SEIDMAN, Cynthia J. Moore. - Upperr Saddle River, New Jersey : Prentice-Hall, 1999 NN000285

Arrangement: 660.6078/ S458

11. Self-study Guide:

Week	Content	Practice (hours)	Students' duties
1	DNA EXTRACTION AND DNA TESTING	10	[1]: chapter 5 (5.1)
2	USING RANDOM AMPLIFIED POLYMORPHIC DNA (RAPD) MARKERS TO ANALYSIS PLANT GENOME	10	+[2]: chapter 4 (page 28-30)
3	USING SIMPLE SEQUENCE REPEAT (SSR) MARKER TO ANALYSIS DIVERSITY OF PLANT	10	+ [2]: page 40-42 + report and presentation

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ON BEHALF OF RECTOR
DEAN/ DIRECTOR

HEAD OF DEPARTMENT