MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

SUBJECT OUTLINE DETAILS

1. Subject: Cells and Molacules Lab. I

- **Code:** BS 210C
- **Credits:** 1
- **Hours:** 30 practical hours, and 30 self-study hours.

2. Management Unit:

- **Department:** Biology
- **College:** College of Natural Sciences

3. Prerequisites: Cells and Molecules I (BS 110C)

4. Subject objectives:

4.1. Knowledge:

Students will develop knowledge, understanding and practical skills of:

4.1.1. cell ultrastructure and processes

4.1.2. mechanisms of inheritance.

4.2. Skill: students will be able to

4.2.1. increases awareness of different levels of thinking: comprehension, application, and evaluation.

4.2.2. apply investigative and problem-solving skills.

4.2.3. work individually and in teams

4.3. Attitude:

4.3.1. Students are encouraged to develop positive values and informed critical attitudes.

4.3.2. Students must have a positively sense in the self-learning

5. Brief description of subject content: This course will acquaint students with the key cellular and subcellular processes underlying the activity of living systems. Topics include the structure, function, and synthesis of macromolecules, the cellular conversion and use of energy, and the replication, transmission, and expression of genetic information.

6. Subject content structure:

Contents	Hours	Objectives
Lesson 1. How to perform the first microscope and using a microscope	**5**	- Knowing how to use a microscope - Knowing how to perform microscope slide

Lesson 2. Structure and Function of Cell and Membrane	**5**	- Organelles identified - Seepage through the cell membrane
Lesson 3. Enzyme Amylase: The Conditional Affects Activity of Enzyme Amylase	**5**	Determination of amylase enzyme activity under the influence of temperature and pH
Lesson 4. The Cell Cycle: Meiosis and Sexual Life Cycles	**5**	Stages observed in a mitotic and meiosis cycles
Lesson 5. The Structure of Chromatin: Giant Chromosomes	**5**	Observed giant chromosomes in the salivary gland cells of Drosophila larvae
Lesson 6. Biotechnology: The Polymerase Chain Reaction	**5**	Understand the principles of electrophoresis and DNA cloning

7. Teaching method:

- Practice.
- Guidance executing action at room experimental (Lab.).

8. Duties of student:

- Lecture/Class attendance: not allow to absent more than 20% of lectures.
- Lab. Attendance: mandatory.
- Discussion and homeworks: mandatory

9. Assessment of student learning outcomes:

9.1. Assessment

No.	Point components	Rules and Requirement	Weights
1	Midterm exam	Tests	10%
2	Final exam	Tests	90%

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] Jane B. Reece, Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Robert B. Jackson, 2011. Campbell Biology, 9ed. Pearson Education, Inc.	570/ C181
[2] Biology Concepts and connections / Neil A Campbell, Jane B Reece, Lawrence G Mitchell. - Menlo Park, California :	570/ C189

Addison Wesley Longman, 1999

[3] Sylvia S. Mader.2010 Biology. McGraw Hill, New York 570/ M181

11. Self-study Guide:

Week	Content	Theory (hours)	Practice (hours)	Students' duties
1	**Lesson 1.** How to perform the first microscope and using a microscope		2	Reading: [1] chapter 1 & 2
2	**Lesson 2.** Structure and Function of Cell and Membrane		2	Reading: [2]&[3] chapter 4 [2]&[3] chapter 5
3	**Lesson 3.** Enzyme Amylase: The Conditional Affects Activity of Enzyme Amylase		2	Reading: [1] chapter 11
4	**Lesson 4.** The Cell Cycle: Meiosis and Sexual Life Cycles		2	Reading: [2] chapter 8 [3] chapter 9
5	**Lesson 5.** The Structure of Chromatin: Giant Chromosomes		2	Reading: [2] chapter 10 [3] chapter 12 [2] chapter 11 [3] chapter 13
6	**Lesson 6.** Biotechnology: The Polymerase Chain Reaction		2	Reading: [2] chapter 12 [3] chapter 14
7	**Final exam**		3	Writting report

Can Tho, ……./……../20…

ON BEHALF OF RECTOR
DEAN/ DIRECTOR

HEAD OF DEPARTMENT