



MINISTRY OF HEALTH
CAN THO UNIVERSITY OF MEDICINE AND PHARMACY

BIOLOGY - GENETICS

1. General information

Course code: CB0501

Total credits: 03

Credits for theory: 02

Credits for practice: 01

Credit hours: 60

Classroom time: 30

Practical hours: 30

This course is designed for undergraduate medical students

Department of Biology - Genetics

Faculty: Faculty of Basic Sciences

2. Course Description

The module on Biology and Genetics serves as an introduction to fundamental biological principles, encompassing molecular biology, cell biology, and related topics. Additionally, it imparts essential knowledge of biology, including genetic laws, human diseases, and diagnostic testing techniques. This course equips students with foundational insights into the field. Moreover, it empowers learners to identify specific medical genetic tests and anticipate inheritance patterns in future generations. The content covered in this module lays the groundwork for a comprehensive understanding of biology and genetics, facilitating the exploration of genetic testing and hereditary traits in subsequent generations.

3. Course Objectives

This course has been designed to provide learners with a comprehensive set of knowledge and skills in the fields of cell biology, molecular biology, and medical genetics. By the end of the course, learners will be equipped with the following competencies:

3.1. Knowledge of cell biology, molecular biology, medical genetics

3.2. The ability to order and analyze the results of several diagnostic tests for genetic diseases in humans.

3.3. The ability to apply principles of biology and medical genetics to explain the mechanisms of disease commonly encountered in humans.

3.4. Skills in performing, observing specimens on a microscope.

4. Course Learning Outcomes

After completing this course, students will be able to:

- CLO1: Explain the fundamentals of molecular biology and cell biology.

- CLO2: Analyze the results of some medical genetic testing techniques.

- CLO3: Determine the mechanism of generation of some common genetic traits and diseases in humans.

- CLO4: Analyze of the laws of inheritance of some common genetic traits and diseases in humans.

- CLO5: Observe the slide on the microscope.
- CLO6: Develop the capacity to analyze the mechanism of human genetic disease on biological principles and medical genetics.

5. Course Outline

5.1. Theory

	Course Topics	Time (hours)	
		Classroom time	Practical hours
1.	Cell structure	2	5
2.	Cell activities	4	5
3.	Fundamental molecular genetic mechanisms	4	
4.	Gene and chromosome mutations	3	5
5.	Molecular biology techniques and cell biology assays	5	5
6.	Human inheritance – patterns of inheritance	5	5
7.	Molecular genetic disorders	4	5
8.	Chromosomal genetic disorders	3	
Total		30	30

6. Teaching and learning methods

6.1. Teaching methods:

- Interrupted short presentation
- Problem solving exercises
- Group discussion

6.2. Learning methods:

- Ask questions, listen, answer questions
- Describe situations, study documents, do exercises
- Students discuss in large groups
- Online present
- Report the results

7. Teaching and learning resources

Document information	Special registration number
Teaching materials	
1. Cao Thi Tai Nguyen – Pham Thi Ngoc Nga (2023). <i>Biology – Genetics (2023)</i> - Cantho University of medicine and pharmacy.	
2. Peter Turnpenny, Sian Ellard, Ruth Cleaver (2017), <i>Emery's Elements of Medical Genetics</i> , New York, Elsevier.	YCTS.06363
3. Thomas D Pollard; William C Earnshaw; Jennifer Lippincott-Schwartz; Graham T Johnson (2017), <i>Cell biology</i> , Philadelphia, PA : Elsevier.	YCTS.03931

Self-study manuals	
1. Harvey Lodish, Arnold Berk, Chris A. Kaiser (2016), <i>Molecular cell biology</i> , W. H. Freeman and Company.	YCTS.008896
2. Dipak Kumar Kar, Soma Halder (2019), <i>Cell biology, genetics and molecular biology</i> , New Central Book Agency.	YCTS.008897
3. Eberhard Passarge (2018), <i>Color atlas of genetics</i> , Thieme Publishing Group.	YCTS.008898

8. Course Grading

Grading components	Range/ Percentage
Attendance	10%
Classwork	10%
Homework	20%
Final examination (multiple-choice questions)	60%
Total	100%

ADDENDUM

Matrix of Course learning outcomes (CLO) aligned with program learning outcomes (PLO)

PLOs CLOs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CLO1	-	I	-	I	I	-	I	I	-
CLO2	I	I	I	R	M	I	I	M	I
CLO3	-	I	I	I	M	I	M	M	I
CLO4	I	I	R	I	M	M	M	M,A	M
CLO5	-	-	-	M	-	-	-	-	-
CLO6	-	-	I	M	M	I	M	M	M
Total	I	I	R	M	M	M	M	M	M

Faculty of Basic Sciences

Department of Biology - Genetics

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