MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

SUBJECT OUTLINE DETAILS

1. Subject: Scientific Research Methods

- **Code:** BT300C
- **Credits: 02**
- **Hours:** 30 theory hours, 60 self-study hours.

2. Management Unit:

- **Department:** Molecular Biotechnology
- **Faculty/School/Institute/Center/Department:**

Biotechnology Research and Development Institute, Can Tho university

3. Prerequisites: Biostatistics (CS464C);

4. Subject objectives:

The purpose of this subject is to provide students: (1) basic principles about Scientific Research method, (2) how to write detailed outline of research project proposal; (3) how to write their thesis.

4.1. Knowledge:

Students will develop knowledge and understanding of:

4.1.1. The principles of Scientific Research method;

4.1.2. The way to write a detailed outline of research projecr proposal;

4.1.3. The way to present his/her thesis.

4.2. Skill:

4.2.1. Ability to understand scientifc research method.

4.2.2. Apply to write s detailed outline of research proposal as well as thesis.

4.3. Attitude:

4.3.1. Students are encouraged to develop the ways of scientific research.

4.3.2. Being creative and curious students.

4.3.3. Honesty in presenting analysis results.

5. Brief description of subject content:

The content of this subject involes the basic principles in scientific research, methods of writing a detailed outline of proposal and presenting a thesis. Besides, it also helps to practice skill how to present research results and skill how to systemically synthetize information .

6. Subject content structure:

6.1. Theory

Contents	Hours	Objectives
Chapter 1. Concepts of Science and Scientific research 1.1. What is Science? 1.2. Scientific Research 1.3. Types of Scientific Research: Subject, Project, Program	**4**	**4.1.1** **4.2.1** **4.2.2** **4.3.1** **4.3.2** **4.3.3**
Chapter 2. Scientific Methods 2.1. What is Concept or Ideas? 2.2. The Judge 2.3. The Deduce 2.4. Structure of Scientific Research Methodology	**4**	**4.1.1** **4.2.1** **4.2.2** **4.3.1** **4.3.2** **4.3.3**
Chapter 3. Scientific Research Method 3.1. What is Scientific Research? 3.2. The Quality of Researcher 3.3. Categorization of Scientific Research 3.4. Types of Scientific Research 3.5. What is the outline of Scientific Research Proposal 3.6. Method of constructing research query, setting Hypothesis 3.7. General Outline and Detailed Outline	**4**	**4.1.1** **4.1.2** **4.2.1** **4.2.2** **4.3.1** **4.3.2** **4.3.3**
Chapter 4. Scientific Research Problems 4.1. Nature of Observation 4.2. Scientific Research Problems 4.2.1. Setting query 4.2.2. Categorizing Scientific Research Problem 4.2.3. How to find out Scientific Research Problem	**4**	**4.1.1** **4.2.1** **4.2.2** **4.3.1** **4.3.2** **4.3.3**
Chapter 5. Documentation and Hypothesis 5.1. Documents: 5.1.1. The purpose of document reference 5.1.2. Categorize research documents 5.1.3. Source of document reference 5.2. Hypothesis 5.2.1. What is Hypothesis? 5.2.2. Characteristics of Hypothesis 5.2.3. Relationship between Hypothesis & Research Problem 5.2.4. Hypothesis structure 5.2.5. How to set Hypothesis 5.2.6. Hypothesis Test	**4**	**4.1.2** **4.1.3** **4.2.1** **4.2.2** **4.3.1** **4.3.2** **4.3.3**
Chapter 6. Report/Dissertation and data Presentation 6.1. Text presentation 6.2. Table presentation 6.3. Figure presentation 6.4. Literature Review	**4**	**4.1.3** **4.2.1** **4.2.2** **4.3.1** **4.3.2**

		4.3.3

7. Teaching method:

- Teaching and explaining.
- Providing examples, supplements.

8. Duties of student:

Students have to do the following duties:

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

9. Assessment of student learning outcomes:

9.1. Assessment

No.	Point components	Rules and Requirement	Weights	Objectives
1	Synthetizing specific topic	Submitting text	40%	Evaluating skill synthetizing document
2	Final exam	Tests	60%	Evaluating whole course

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]. Scientific Research Method Handout	File-BiRDI website
[2]. Robert S. Day, 1994. How to Write and Publish a Scientific Paper, 4th edition, Oryx Press, Phoenix.	File-BiRDI website (two copied pages)
[3]. Wilson, E. Bright, 1952. An Introduction to Scientific Research. McGraw-Hill.	BiRDI Library

11. Self-study Guide:

Week	Content	Theory (hours)	Practice (hours)	Students' duties
1	**Chapter 1. Science and Scientific research** 1. What is Science? 2. Types of Scientific Research: Subject, Project, Program	10	....	Reading Material 3
2	**Chapter 2. Scientific Methods** 1. What is Concept or Ideas? 2. The Judge	10	....	Reading Material 3

	3. The Deduce 4. Structure of Scientific Research Methodology			
3	**Chapter 3. Scientific Research Method** 1. What is Scientific Research? 2. The Quality of Researcher 3. Categorization of Scientific Research 4. Types of Scientific Research 5. What is the outline of Scientific Research Proposal 6. Method of constructing research query, setting Hypothesis 7. General Outline and Detailed Outline	10		Reading Material 3
4	**Chapter 4. Scientific Research Problems** 1. Nature of Observation 2. Scientific Research Problems 3. How to find out Scientific Research Problem	10		Reading Material 3
5	**Chapter 5. Documentation and Hypothesis** 1. Documents: 2. Hypothesis	10		ReadingMaterial 3
6	**Chapter 6. Report/Dissertation and data Presentation** 1. Text presentation 2. Table presentation 3. Figure presentation 4. Literature Review	10		Reading Material 2

Can Tho, April/25/2014

ON BEHALF OF RECTOR
DEAN/ DIRECTOR

HEAD OF DEPARTMENT