MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

COURSE SYLLABUS

1. INFORMATION OF COURSE AND LECTURER

1.1 Course name and code: **Scientific Research Methodology**
1.2 Course specification: 2 credits (Theory: 1.4; Assigment: 0.6; Practice: 0), 40 hours (T: 20; A: 20; P: 0)
1.3 Prerequistes courses: No
1.4 Responsible Department: Dept. of Marine Aquaculture
1.5 Information of lecturer(s):
Lecturer: Prof. Dr. Nguyen Thanh Phuong
Email: ntphuong@ctu.edu.vn
Co-lecturer: Dr. Tran Minh Phu
Email: tmphu@ctu.edu.vn

2. COURSE DESCRIPTION

The aim of the course is to provide the students the theoretical and practical knowledge and skills in scientific research concept, writing research proposal, reviewing scientific litterature, preparing scientific paper/report/thesis, and presenting research results in oral and poster.

3. COURSE EXPECTED LEARNING OUTCOMES

On completion of the course:

a) Theory (*knowledge and understanding*): the student should be able to *(i)* understand principles of scientific research; *(ii)* prepare a research proposal; *(iii)* implement a research work *(iv)* understand correct ways to review and to cite scientific literature; and *(v)* write scientific paper/report/thesis; and *(vi)* present research results in oral and poster.

b) Practice (skills and ability): the student should be able to *(i)* explain different research concepts; *(ii)* perform literature review and citation; *(iii*) formulate a research proposal and conduct a research project; *(iv)* prepare a scientific paper/report/thesis; and *(v*) present research results at conference and thesis defense.

4. COURSE CONTENTS

Chapters	**Hours (T/A/P)**
Chapter 1: Scientific Research Concept and Design This chapter will provide the student with in-depth knowledge of different scientific research concepts and research design and methods including *(i)* definition of scientific research concepts, *(ii)* research questions; *(iii)* developmen of reseach hypotheses; *(iv)* framing the research with the correct methods,… *For this chapter, students are required to read the reference number [1], [2].*	2/0/0
Chapter 2: Literature Search, Review and Citation	3/0/2

This chapter will provide the student an understanding *(i)* why is the literature search and review important?; *(ii)* sources of literature/ information; *(iii)* search and management of literature using computer softwares; *(iv)* reading method and analysis of the literature; *(v)* citation methods; and *(vi)* principle of listing literature. *For this chapter, students are required to read the reference number [3].*	
Chapter 3: Writing Research Proposal and Imlementation This chapter will provide student *(i)* definition of different research proposals; *(ii)* establishment of problem tree; *(iii)* structure of different resarch proposals; *(iv)* guidance for writing details of a research proposal, *(v)* implementation of research works; *(vi)* evaluation of research proposals,… *For this chapter, students are required to read the reference number [1], [7].*	5/0/3
Chapter 4: Writing Scientific Paper and Report This chapter will teach the student undestanding and skill *(i)* why is the scientific writing important?; *(ii)* definition of paper/article, research report, thesis,..; *(iii)* structure, format and requirement of paper/report/thesis; *(iv)* steps of paper/report/thesis preparation; *(v)* drafting the paper/report/thesis including data presentation; *(vi)* editing paper/report/thesis; *(vii)* selection of journal and submission of paper for publication; *For this chapter, students are required to read the reference number [2], [5], [6], [7], [8], [9].*	5/0/3
Chapter 5: Presentation of Scientific Paper and Report This chapter will teach the student methods and skills for the preparation of an oral and a poster of research results for conference/symposium and thesis defense. This include *(i)* why is the presentation of research result important; *(ii)* structure/format of oral/poster and thesis presentation; *(iii)* methods to prepare oral/ poster/thesis presentation; *(iv)* how to present an attractive oral/poster presenttion,…. *For this chapter, students are required to read the reference number [2], [4].*	5/0/2
Chương 6: Assignment This chapter assists the student practical assignments including *(i)* search and review/analysis of literature; *(ii)* development of probem tree; *(iii)* preparation of a research proposal (*e.g*. research project, thesis,…); *(iv)* drafting a scientific paper using provided information; *(v)* preparation of oral/poter presentation using published papers; Students are divided into small groups and are given a variety of examples of effective and ineffective research proposals, reports, papers, theses,… for working on given assigments.	0/0/10

5. TEACHING METHODS AND ASSESSMENT

5.1 Teaching methods

This is a graduate-level course in scientific research methodology. The course will consist of class lectures, readings and presentations, exercises, and written assignments.

5.2 Assessment methods

The following provides an approximate breakdown of how each assignment contributes to the overall performance in the class.

- Class participation: 10%
- Mid-term exam: 20%
- Assignments: 20%
- Final exam: 50%

6. READING REFERENCES

[1] Barnard, C., Gilbert, F., McGregor, P., 2001. Asking questions in Biology. PEARSON Prentive Hall. 190 pages.

[2] Can Tho University. 2000. A guide to the preparation of thesis. 28 pages (in Vietnamese).

[3] De Montfort University. How to undertake a literature search and review for dissertations and final year projects. Availabel at http://www.library.dmu.ac.uk/Images/Howto/LiteratureSearch.pdf.

[4] Grossman, M., 2002. Techniques for writing and presenting a scientific paper. Wageningen University, the Netherlands. Lecture notes.

[5] Yossa, R., 2014. Writing a scientific manuscript from original aquaculture research. Journal of Applied Aquaculture, 26 (4), 293-309, DOI: 10.1080/10454438.2014.965572

[6] Robert, B., 1987. Scientists must write: A guide to better writing for scientists, engineers and student. Chapman & Hall. 176 pages.

[7] Shortland. M., Gregory, J., 1991. Communicating science: A handbook. Longman. 186p

[8] Stapleton, P., 1987. Writing research papers: An easy guide non-native-English speaker. Australian Center for International Agricultural Research. 47 pages.

[9] University Putra Malaysia. 2000. Guide to the preparation of thesis. 40 pages.

Date:
Lecturers

Nguyen Thanh Phuong
Tran Minh Phu