MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

COURSE SYLLABUS

1. INFORMATION OF COURSE AND LECTURER

1.1. Course name and code: Application of Gis in aquaculture – AQ624
1.2. Course specification: 2 Cred. (Theory: 1; Assignment: 0; Practice: 1), 45 hours (T: 15; A: 0; P: 30)
1.3. Prerequistes courses:
1.4. Responsible Department:
1.5. Information of lecturer:

Name: Dr. Nguyen Lam Anh
Email: lamanhng2002@yahoo.com

Co-teaching lecturer:

Name :
Email:

2. COURSE DESCRIPTION

Geographic information system (GIS) is a system which includes hardware, software, geographical data and experts. GIS is designed to input, store, retrieve, manipulate, analyze and output geographically referenced data or geospatial data, in order to support decision making for planning and management of land use, natural resources, environment, transportation, urban infrastructure… The course of application of GIS in aquaculture will provide knowledge of GIS including fundamental concepts, database management, data manipulation and analysis, remote sensing and GIS, and the applications in aquaculture.

3. COURSE EXPECTED LEARNING OUTCOMES

After the course, the students can understand and discuss topics relating to GIS and GIS application in aquaculture. They can apply knowledge to map the suitable sites for aquaculture or create thematic maps for aquaculture planning and management purposes.

Theoretically:

- Knowing concepts, functions and components of GIS, and the integration of remote sensing and GIS.
- Understanding GIS database: the data models, data structure and their relationship
- Being master of data analysis to create thematic maps.
- Being aware of major categories of GIS application in aquaculture and future direction.
- Being master of methodologies to use GIS application in aquaculture

Practically:

- Capability to create thematic maps for aquaculture to support decision making process.

4. COURSE CONTENTS

Chapters	Hours (T/A/P)
Chapter 1. Introduction to GIS *This chapter will provide knowledge of fundamental concepts, functions, component and benefit of GIS.* 1.1. GIS concepts 1.2. GIS functions 1.3. GIS components 1.4. GIS benefits *In order to understand well this chapter, students should read references of [1], [2].*	2/0/0
Chapter 2. Data management *This chapter will provide knowledge on database approach and structure. Students will have 5 hours to practice on create and input data using Mapinfo software.* 2.1 Introduction 2.2 3 classic data models 2.3 The nature of geographic data 2.4 Spatial data models 2.5 Attribute data models *In order to understand well this chapter, students should read references of [1], [2].*	3/0/5
Chapter 3. Data analysis *This chapter will provide knowledge on methodologies to manipulate and analyze the spatial and attribute data in order to create thematic map. This chapter has 10 hours of practice to analyze data and create thematic map by Mapinfo software. The data source are delivered from the project of impacts of climate change on tra catfish aquaculture in Mekong Delta.* 3.1. Introduction 3.2. Organizing geographic data for analysis 3.3. Spatial data analysis 3.4. Attribute data analysis 3.5. Integrated of spatial and attribute data analysis 3.6. Thematic map 3.7. Practice: analyse the salt intrusion data then create the thematic map of salinity concentration. *In order to understand well this chapter, students should read*	5/0/10

references of [1], [2].	
Chapter 4. Remote sensing and GIS *This chapter will provide knowledge of fundamental concept and data of remote sensing, and application of integration remote sensing and GIS in fisheries.* 4.1. Remote sensing concepts 4.2. Remote sensing data 4.3. Application of remote sensing and GIS in fisheries *In order to understand well this chapter, students should read references of [1], [2],[4], [5].*	2/0/0
Chapter 5. Application of GIS in aquaculture *This chapter will provide knowledge of major categories of GIS application in aquaculture, data characteristic for GIS use, decision making support models, and some case studies. Group of students will present projects of GIS application in aquaculture. This chapter has 15 hours of practice to map aquaculture zoning.* 5.1. The major categories of GIS application in aquaculture and future direction 5.2. Data characteristic for GIS use 5.3. Decision support models 5.4. Case studies: group of students will find out the projects relating to GIS application in aquaculture then present. 5.5. Practice: based on salt water intrusion caused by sea level rise scenarios, students create impacted map of tra catfish aquaculture location. *In order to understand well this chapter, students should read references of [3], [4], [5].*	3/0/15

5. TEACHING METHODS AND ASSESSMENT

5.1. Teaching methods: this course will be taught including theoretically *(15 hours)*, practically *(30 hours);* the students will do the exercises and group presentation during the course.

5.2. Assessment methods: Group presentation: 30%, practice: 30% and final examination: 40%.

6. READING REFERENCES

[1] Jeffrey Star and John Estes. Geography information systems: An introduction. Prentice Hall, 1990.

[2] Stan Aronoff. Geographic information systems: A management perspective. WDL Publications 1989.

[3] William L. Fisher and Frank J. Rahel. Geographic information systems in fisheries. American Fisheries Society, 2004.

[4] James McDaid Kapetsky and Jose Aguilar-Manjarrez. Geographic information systems, remote sensing and mapping for the development and management of marine aquaculture. FAO Fisheries Technical Paper 458.

[5] Geoffery J. Meaden and José Aguilar-Manjarrez. Advances in geographic information systems and remote sensing for fisheries and aquaculture. FAO Fisheries Technical Paper 552.

Date: *Oct. 30th 2015*

Lecturer

Nguyen Lam Anh