MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

COURSE OUTLINE DETAILS

1. Course: Practice on aquaculture (Thực tập giáo trình chuyên môn)
- **Code number:** AQ225
- **Credits:** 5
- **Hours:** 150 practice hours

2. Management Unit:
- **Department:** Coastal aquaculture
- **Faculty:** College of Aquaculture and Fisheries

3. Requisites:
- **Prerequisites:** NoP
- **Corequisites:** No

4. Course objectives:

Objectives	Descriptions	Program outcomes
4.1	To introduce and review general knowledge technology on seed production and farming of important aquaculture species	2.1.3 a, b
4.2	To train students on practice of seed production on important aquaculture species such as shrimp, prawn; crab, *Pangasius* catfish, *Clarias* catfish, common carp, silver barb fish, Tilapia. Students know well how to design, equip and use of facilities, operate and manage the hatchery.	2.2.1 a, b
4.3	To develop skill in working individually or in group on hatchery practice, writing and presenting reports.	2.2.2
4.4	To develop attitude in career, self- and long-life learning, and contribution to sustainable development of aquaculture and fisheries	2.3

5. Course learning outcomes: Upon completing the course, students will be able to

COs	Descriptions	Objectives	POs
	Knowledge		
CO1	To understand and explain well the principles and practices on seed production of important aquaculture species and hatchery management.	4.1	2.1.3 a,b
	Skills		

COs	Descriptions	Objectives	POs
CO2	To practice on broodstock culture, induced breeding, larval culture, livefood culture, postlarval nursery of important species such as shrimp, prawn, crabs, pangasius catfish, clarias catfish, common carp, silver barb, Tilapia.	4.2	2.2.1a
CO3	Students will be able to operate different facilities and equipments in the hatchery as well as to manage well the hatchery.		2.2.1b
CO4	To organize and work in groups.	4.3	2.2.2
	Attitudes/Autonomy/Responsibilities		
CO5	To have good attitudes in study, will be ready for their career; responsible for the development of aquaculture in the region.	4.4	2.3

Note: "COs" means Course Outcomes; "POs" means Program Outcomes

6. Brief description of the course:

This 5-credit course is the required course of the study field in aquaculture. The course focuses on training students on practice of seed production and hatchery management of important aquaculture species such as shrimp, prawn, crabs, pangasius catfish, clarias catfish, common carp, silver barb, Tilapia... In addition to practice, students will pay visits to shrimp and fish hatcheries and farms in the region. With knowledge and skill gained from the course, students are ready to work in the company or operate their own hatchery and farm after graduation. Group working is the main task during the course.

7. Course structure:

7.1. Theory:

	Content	Hours	Cos
Chapter 1	**Introduction to shrimp and fish hatchery**	**5**	
1.1	Crustacean and fish hatchery structure, facilities and equipments		CO1
1.2	Biosecurity		
1.3	Safety issues		
1.4	Other regulations		
Chapter 2	**Seed production of crustacean (shrimp, prawn and crabs)**	**60**	
2.1	Hatchery preparation		CO1-CO5
2.2	Water treatment		
2.3	Larval rearing		
2.4	Post larval nursery		

Chapter 3	**Seed production of freshwater fish (*Pangasius* catfish, Clarias catfish, common carp, silver barb, Tilapia)**	**60**	
3.1	Hatchery preparation		CO1-CO5
3.2	Broodstock selection and conditioning		
3.3	Induced spawning		
3.4	Larval rearing		
3.5	Fingerling rearing		
Chapter 4	**Field trips**	**15**	
4.1	Field trips to shrimp hatchery and farms		CO1-CO5
4.2	Field trips to freshwater fish hatchery and farms		
Chapter 5	**Report, discussion and evaluation**	**10**	
	Report preparation in groups		CO1, CO4, CO5
	Report presentation in groups and evaluation		
	Final exam		

8. Teaching methods:

- Reviewing principles and guiding practices on seed production of important aquaculture species
- Field trips
- Group report and presentation

9. Duties of student:

Students have to do the following duties:

- Participating in all the practices
- Participating in field trips
- Participating group report preparation and presentation
- Participating final exam

10. Assessment of course learning outcomes:

10.1. Assessment

No.	Point components	Rules and Requirements	Weights	COs
1	Practice and field trip	Hard work and active during practice and field trip	10%	CO1-CO5
2	Group report preparation and presentation	Completed report and good performance in presentation	40%	CO4-CO5
3	Final exam (individually)	- Short questions - Multi-choice	50%	CO1, CO4, CO5

10.2. Grading

- Grading components and final test scores will be marked on a scale of 10 (0 to 10), rounded to one decimal place.
- Course score is the sum of all the components of the evaluation multiplied by the corresponding weight. The course score is marked on a scale of 10 and rounded to one decimal place, then it is converted to A-B-C-D score and score on a scale of 4 under the academic regulations of the University.

11. Learning materials:

Learning materials information	**Barcode number**
[1] Trần Ngọc Hải, Châu Tài Tảo, Nguyễn Thanh Phương, 2017. Giáo trình Kỹ thuật sản xuất giống và nuôi giáp xác. NXB ĐHCT, 211 trang	TS.005489
[2] FAO, 2007. Improving *Penaeus monodon* hatchery practices. Manual based on experience in India. FAO Fisheries Technical Paper, No 446, 101pp	
[3] New, M., 2002. Farming Freshwater Prawns: A Manual for the Culture of the Giant River Prawn (*Macrobrachium rosenbergii).* FAO Fisheries Technical Paper 428, 212pp	693N532; TS002155
[4] Nguyễn Văn Kiểm, Phạm Minh Thành, 2013. GT: Kỹ thuật SXG cá nước ngọt, NXB Nông nghiệp	TS005312
[5] Woynarovich, E. and L. Horváth, 1980 The artificial propagation of warm-water *finfishes* - a manual for extension. FAO Fish.Tech.Pap., (201):183 p.	TS003154
[6] Teaching material/hand-out	

12. Self-study Guide:

Week	**Content**	**Theory (hours)**	**Practice** (hours)/ **Field trips**	**Student's Tasks**
1	**Chapter 1:** Introduction to shrimp and fish hatchery		5	**Pre-reading**: - Read hand out [6] - Read references: [1], [2], [3], [4], [5]
2-3	**Chapter 2:** Seed production of crustacean (shrimp, prawn and crabs)		60	**Pre-reading**: - Read hand out [6] - Read references: [1], [2], [3]

4-5	**Chapter 3: :** Seed production of freshwater fish		60	**Pre-reading**: - Read hand out [6] - Read references: [4], [5]
6	**Chapter 4:** Field trips		15	**Pre-reading**: - Read hand out [6] - Read references: [1], [2], [3], [4], [5]
14	**Chapter 5:** Report preparation, presentation and evaluation		10	**Pre-reading**: - Read hand out [6] Read references: [1], [2], [3], [4], [5]

Can Tho, ..30.../...8..../2022

ON BEHALF OF RECTOR
DEAN OF COLLEGE

TRƯỜNG ĐẠI HỌC CẦN THƠ

Vũ Ngọc Út

HEAD OF DEPARTMENT

Lê Quốc Việt