

COURSE LAYOUT

1. GENERAL

SCHOOL	Animal Biosciences		
DEPARTMENT	Animal Science		
STUDY LEVEL	Undergraduate		
COURSE CODE	0041	SEMESTER	7 th
COURSE TITLE	Aquaculture		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Theory and laboratory practice		6	6
COURSE TYPE (Foundation course, General knowledge, Scientific area, Developing skills)	Scientific area		
PREREQUISITES			
LANGUAGE	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES		
COURSE WEB PAGE			

2. LEARNING OUTCOMES

Learning Outcomes
<p>Upon the completion of the course, the students will have the ability to:</p> <ul style="list-style-type: none"> • Understand the basic principles of aquaculture • Assess the ability and the potential of an aquatic organism for mass production • Select the appropriate production system for the corresponding organism • Manage and organize fish farms and develop basic technical practices for animal husbandry • Evaluate water quality and estimate water suitability for aquaculture • Assess development and growth parameters of the organisms during production • Familiarize with saltwater and freshwater recirculated aquaculture systems (RAS) and stock management
General Competences
<ul style="list-style-type: none"> • Search, analysis and synthesis of data and information, utilizing modern technologies • Adaptation in various conditions • Decision-making • Independent personality • Teamwork skills • Project planning and management • Consideration for the natural environment • Develop judgement and self-criticism • Promotion of free, creatinal and inductive thought

3. COURSE CONTENT

- Importance of aquaculture
- Background, current status (internationally and Greece) and future prospects of sustainable development
- Aquaculture products (fish, mollusks, crustaceans, seaweed)
- Main phases of the production process
- Criteria for selection of aquaculture species
- Aquaculture production systems (use of feed, water use)
- Aquaculture and the environment – Environmentally friendly systems
- Water quality (physicochemical characteristics, origin)
- Site selection criteria for aquaculture establishment
- Aquaculture engineering for fish production (estuaries, ponds, tanks, net pens, water handling for semi-closed and closed aquaculture systems, RAS)
- Aquaculture engineering for bivalve mollusks (seed collectors, nurseries and production systems)
- Aquaculture engineering for decapod crustaceans
- Management of aquaculture enterprises
- Phytoplankton cultivation in hatcheries
- Zooplankton production in hatcheries
- Laboratory practical on water quality assessment in aquaculture (sampling and quantification, oxygen, pH, salinity, temperature, ammonia, nitrite, suspended particles – turbidity)
- Laboratory practical on Artemia cyst hatching and developmental stages
- Laboratory practical on the use of aquatic organisms in toxicity trials
- Laboratory practical on recirculated aquaculture systems and fish handling

4. TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	Physical	
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • PowerPoint slideshows and video projections during teaching • Teaching activity support through e-class platform • Contact with the students via e-mail 	
TEACHING ORGANISATION (Lectures, individual or group assignments, field trips, individual study et.c.)	Activities	Workload per semester
	Lectures	75
	Laboratory practicals focusing on methodology implementation and case studies in small student groups	75
	Team projects on a case study	
	Field trip/ Personal assignment	
	Total contact hours and training	150
STUDENTS EVALUATION	Written exams	

5. BIBLIOGRAPHY

-Proposed bibliography

1. Constructions of aquaculture systems. Klaoudatos S. and Klaoudatos D. Propompos Publications. Eudoxus code: 2727 (IN GREEK)
2. Constructions in aquaculture. Papoutsoglou S.E. Stamoulis Publications. Eudoxus code: 22863 (IN GREEK)

-Proposed scientific journals

Aquaculture, Aquacultural Engineering, Aquaculture International