COURSE LAYOUT

1. GENERAL

SCHOOL	Animal Biosciences		
DEPARTMENT	Animal Science		
STUDY LEVEL	*Undergraduate* (*Mandatory)*		
COURSE CODE	**36**	**SEMESTER**	8th
DEPERTMENT IN WHICH IT IS TAUGHT	Animal Science (Mandatory)		
COURSE TITLE	Production of aquatic organisms		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
	Theory	3	3
	Laboratory practice	3	3
			6
COURSE TYPE (Foundation course, General knowledge, Scientific area, Developing skills)	Scientific area		
PREREQUISITES			
LANGUAGE	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES (in English)		
COURSE WEB PAGE	Theory https://oeclass.aua.gr/eclass/courses/EZPY168/ Laboratory practice https://oeclass.aua.gr/eclass/courses/EZPY169/		
TEACHING STAFF	Theory: E. Miliou, N. Karakatsouli, K. Bitchava, A. Dimitroglou, E. Malandrakis, Laboratory practice: N. Karakatsouli, K. Bitchava, A. Dimitroglou, E. Malandrakis		

2. LEARNING OUTCOMES

Learning Outcomes
Upon the completion of the course, the students will have the ability to: • Understand the whole production procedure of the most common aquaculture organisms (species/genus/family) in Greece and internationally • Handle the aquatic organisms in a way to promote welfare during the breeding period until harvest • Assess the physiological status of the aquatic organisms during the production period • Safeguard the quality of aquaculture products by applying procedures during production, slaughtering and processing
General Competences
• 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, creational and inductive though

3. COURSE CONTENT (SYLLABUS)

Theory

- Hatcheries of aquatic organisms
- Saltwater finfish breeding (gilthead seabream, European seabass)
- Emerging candidate finfish species (red porgy, common pandora, sharpsnout seabream, tuna, meagre)
- Freshwater and brackish water finfish farming (carp, trout, salmon)
- Production of bivalve molluscs (oyster, mussel, scallop)
- Production of cephalopods (octopus, cuttlefish)
- Farming of gastropods (abalone)
- Farming of decapod crustaceans (lobster, shrimps, crayfish)
- Seaweed cultivation (brown algae – kelps, red algae)
- Fish diseases in aquaculture

Laboratory practice

- *Assessment of production levels in aquaculture*
- Handlings during production (anaesthesia, weighting, blood sampling, tagging, transportation of live fish)
- Fish harvesting and slaughtering methods
- Processing and packaging of aquaculture products
- Quality assessment of aquaculture products

4. TEACHING and LEARNING METHODS - EVALUATION

TEACHING METHOD	Physical (face to face) On-line (when necessary)
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	• PowerPoint slideshows and video projections during teaching • Teaching activity support through e-class platform • Contact with the students via e-mail and announcements in the platform e-student • MS Teams (when necessary)
TEACHING ORGANISATION (Lectures, individual or group assignments, field trips, individual study et.c.)	

Activities	***Workload per semester***
Lectures	39
Laboratory practice focusing on methodology implementation and case studies in small student groups	39
Team projects on a case study	
Field trip/ Personal assignment	
Individual study	72

	Total contact hours and training	**150**
STUDENTS EVALUATION	I. Theory (a) Optional attendance of Lectures by students (progress, assignments, etc.). (b) Final written examination (100%) including short answer or multiple-choice questions. II. Laboratory practice (a) Mandatory monitoring of the laboratory exercises by the students, with attendance records (progress, assignments, exercises, etc.). (b) Assessment of skills in laboratory measurements/observations and written examination with short answer or multiple-choice questions. III. The evaluation language is Greek (for ERASMUS+ students the evaluation is in English). III. The evaluation criteria are communicated to the students.	

5. RECOMMENDED LITERATURE

Recommended Literature for Theory:

(A) Related scientific journals - Publications:

1. Aquaculture
2. Aquacultural Engineering
3. Aquaculture International
4. Aquaculture Research
5. Reviews in Aquaculture
6. Aquaculture Reports
7. Journal of Fish Biology

(B) Digital Educational Materials (e-class):

1. N. Karakatsouli. Marine finfish breeding: seabream – seabass, Part A (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
2. N. Karakatsouli. Marine finfish breeding: seabream – seabass, Part B (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
3. E. Malandrakis. Freshwater and brackish water finfish farming (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
4. E. Malandrakis. Production of decapod crustaceans. Part A (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
5. E. Malandrakis. Production of decapod crustaceans. Part B (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
6. E. Malandrakis. Production of bivalve molluscs (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
7. A. Dimitroglou. Emerging finfish species (red porgy, common pandora, sharpsnout seabream, tuna, meagre) (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)

8. E. Miliou. Production of cephalopods (octopus, cuttlefish) and gastropods (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
9. E. Miliou. Seaweed cultivation (brown algae – kelps, red algae) (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
10. K. Bitchava. Fish diseases in aquaculture (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)

(C) Recommended Textbooks (EVDOXOS):

1. Plant cultivation and animal breeding in aquaculture. Klaoudatos S and Klaoudatos D. Propompos publications. Eudoxus code: 12475860 (IN GREEK)
2. Fish endocrinology. Papoutsoglou S.E. Stamoulis publications. Eudoxus code: 22769 (IN GREEK)

Suggested Literature for the Laboratory practice:

Digital Educational Materials (e-class):

1. N. Karakatsouli. Anaesthesia – Blood sampling – Transportation (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
2. N. Karakatsouli. Anaesthesia – Blood sampling (video recordings), Department of Animal Science, Agricultural University of Athens (AUA)
3. K. Bitchava. Fish harvesting and slaughtering methods (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
4. K. Bitchava. Quality assessment of aquaculture products (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
5. E. Malandrakis. Fish processing and packaging (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)
6. A. Dimitroglou. Assessment of production levels in aquaculture (lecture presentation, ppt), Department of Animal Science, Agricultural University of Athens (AUA)