COURSE OUTLINE

1. GENERAL

SCHOOL	SCIENCE OF AGRICULTURE		
ACADEMIC UNIT	ANNIMAL PRODUCTION, FISHERIES AND AQUACULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AS_402	**SEMESTER**	**D**
COURSE TITLE	ICHTHYOLOGY		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).	5	6

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	special background
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. In case of ERASMUS students: English
IS THE COURSE OFFERED TO ERASMUS STUDENTS	yes
COURSE WEBSITE (URL)	

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

After the successful completion of the course, students should be able to understand:

- The basic morphology and variation of external anatomical elements of fishes and their role on fishes adaption in habitats
- The basic anatomy, the organization and function of systems
- Know the young stage of fishes (eggs, larvae's and fry) and the basic organization of their body
- Know and apply methods of fish identification
- know and apply methods of age determination, morphometric plasticity growth rate and to estimation mortality
- Know and apply methods to estimation of spawning period, reproductive behavior

and fecundity.

- Know and apply methods to estimation of food spectrum, trophic level and trophic competition.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

- Working independently
- Team work
- Respect for the natural environment
- Criticism and self-criticism
- Decision-making

3. SYLLABUS

The objectives of the course is the study of the systematics, anatomy, morphology, age and growth, reproduction and feeding of fishes. In particular in the lectures are analysed the history, purpose of course, fish characteristic, morphology, systematic, anatomy and functional morphology, Systems, organs and function, young stage of fishes, fishes relationships by other organism, Buoyancy and locomotion, Homeostasis (osmoregulation, thermal adaptations, respiration), Age, growth, length weight relationship, growth parameters, Reproduction and fecundity, Food and Feeding, analysis of stomach content, trophic level, food competition, and use of FishBase, the largest electronic encyclopaedia for fishes (www.fishbase.gr).

Laboratory Exercises: Introduction and applications of FishBase (www.fishbase.org), External fish morphology (diversity of external characteristics)–Anatomy, fish identification, Biometry-Length-weight relationships, Age–growth, growth parameters and length-weight relationships, spawning period, Fecundity, feeding, trophic level, mortality

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Use of ICT in teaching (Power-Point presentations) • Communication with the students through the online platform E-class • Uploading of lecture slides and other

<table>
<tr><td></td><td>educational material on E-class</td></tr>
<tr><td>TEACHING METHODS
The manner and methods of teaching are described in detail.
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.
The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>39</td></tr>
<tr><td>practice</td><td>26</td></tr>
<tr><td>project</td><td>18</td></tr>
<tr><td>Private study and final examination</td><td>67</td></tr>
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<tr><td></td><td></td></tr>
<tr><td>Course total</td><td>150</td></tr>
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<tr><td>STUDENT PERFORMANCE EVALUATION
Description of the evaluation procedure
Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other
Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</td><td>

The final exams are based on short-answer questions and multiple-choice questionnaires 80% and projects 20%
Students with learning difficulties are tested orally
Language of evaluation: Greek, in case of ERASMUS students: English

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</table>

5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

- Q. Bone, R. Moore, 2008. Biology of Fishes, ISBN 9780415375627 - CAT# RU75622. https://www.crcpress.com/Biology-of-Fishes/Bone-Moore/p/book/9780415375627
- P.J. B. Hart , J. D. Reynolds 2002. *Handbook of Fish Biology and Fisheries* Volume 1. ISBN-10: 9780632054121

- *Related academic journals:*

- Journal of fish biology
- Journal of Experimental Biology
- Journal of Morphology
- Fisheries research