COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	ANIMAL PRODUCTION, FISHERIES & AQUACULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AS_500	**SEMESTER**	5th
COURSE TITLE	POPULATION DYNAMICS		

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**
(the credits are awarded for the whole course)	4	6
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	ICHTYHYLOGY
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. Teaching may be performed in English in case of foreign students
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*

By the end of this course the student will be able to:

- Understand the structure and dynamic of natural resources
- Apply basic models and explains the modelling outputs
- Forecast the future changes in population dynamics
- Efficiently use software of fish population dynamics.

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…*

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Team work
Criticism and self-criticism
Respect for the natural environment

3. SYLLABUS

Lectures

1. Basic issues of population dynamics.
2. Population, stock, abundance and density.
3. Recruitment, migration and mortality.
4. Model construction. Types of models.
5. Population models.
6. Fisheries population dynamics.
7. Estimation of biological and fisheries parameters.
8. Estimation of fishing effort and MSY.
9. Selectivity models.
10. Ecosystem-based models.
11. Population dynamics in farms.
12. Modelling of climatic and anthropogenic impacts in fish stocks.
13. Revision.

Exercises

1. Assignment on estimation of fishing effort in Greek waters.
2. Project presentation
3. Analyses of biomass reproductive and MSY estimates.
4. Estimation of fishing gear selectivity.
5. Searching in the literature of selectivity experiments in small-scale fishery.
6. Project presentation
7. Searching in the literature for modelling of fisheries resources.
8. Project presentation
9. Modelling construction based on biological parameters and fisheries data.
10. Analysis of fisheries landings data.
11. Data quality of fisheries data.
12. Ecopath with Ecosim mass balance model.
13. Revision summary

4. TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>DELIVERY
Face-to-face, Distance learning, etc.</td><td>Face to face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
Use of ICT in teaching, laboratory education, communication with students</td><td>• Use of ICT (powerpoint) in teaching
• Use of ICT (powerpoint) in laboratory exercises
• Use of ICT in Student Communication (Learning Support through the e-class platform)</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>Study and analysis of bibliography</td><td>51</td></tr>
<tr><td>Exercises</td><td>13</td></tr>
<tr><td>Team Project</td><td>24</td></tr>
<tr><td>Private study time of the students for the lab preparation and final examination</td><td>23</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Course total</td><td>150</td></tr>
</table>
</td></tr>
<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>Greek language is used. For foreign students (e.g. Erasmus students) it can be done in English

1. Written final examination (A)
2. Team project (B)

Each case is graded on a scale of 0-10

Final grade (FG):
FG = 0.7A + 0.3B

Minimum passing grade: 5 (Grade: 0-10)</td></tr>
</table>

5. ATTACHED BIBLIOGRAPHY
