

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	AGRICULTURE		
<b>ACADEMIC UNIT</b>	ANIMAL PRODUCTION, FISHERIES & AQUACULTURE		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	AS_3006	<b>SEMESTER</b>	
<b>COURSE TITLE</b>	BIOLOGICAL PRODUCTION & FARMING		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>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</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
LECTURES		2	3
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b>  <i>general background, special background, specialised general knowledge, skills development</i>	<i>specialised general knowledge,</i>		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEKS, ENGLISH		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	YES		
<b>COURSE WEBSITE (URL)</b>			

### 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*

Understanding the international trends of organic production through sustainable processes.  
Use of alternative energy with minimal ecological footprint. Organic farming know-how transfer to the developing world by optimizing the use of local natural resources. Considering the marketing and the markets of organic products and their certification methodology.

### **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?*

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

*Working in an international environment*

*Working in an interdisciplinary environment*

*Production of new research ideas*

*Adapting to new situations*

*Respect for the natural environment*

### **3. SYLLABUS**

1. Sustainability & global food production. Environmental, & socio-economic factors.
2. Organic farming. Ecological production. Principles, scale and management measures.
3. Ecological footprint. Trade in pollutants and nutrients. Experiences from agro-livestock and aquaculture production.
4. Alternative energy resources and production systems
5. Polytrophic aquaculture. Selection of organizations. Economic evaluation, limiting factors.
6. Biofloc technology and biological applications in breeding.
7. Small-scale agricultural and aquaculture productions. Aquaponics.
8. Technology transfer to extreme deserted environments in areas such as N. Africa and M. East.
9. Dietary trends and consumer preferences in the formulation of production standards.
10. Development and use of indicators for decision-making.
11. Estimation of Ecological Footprint. LCA in animal products.
12. Determination of ecosystem services.
13. Certification of organic farming, sustainable management, local products.

#### 4. TEACHING and LEARNING METHODS - EVALUATION

<p><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	<p>Face to face teamwork</p>												
<p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of ICT in teaching</p>												
<p><b>TEACHING METHODS</b></p> <p><i>The manner and methods of teaching are described in detail.</i></p> <p><i>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.</i></p> <p><i>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</i></p>	<table border="1" data-bbox="589 548 1232 814"> <thead> <tr> <th><i>Activity</i></th> <th><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>Lectures (2 h X 13 wks)</td> <td>26</td> </tr> <tr> <td>Project, essay writing (3,46h X13 wks)</td> <td>45</td> </tr> <tr> <td>Project Essay Presentation(1h/13 wks)</td> <td>1</td> </tr> <tr> <td>Final exam (3h/13wks)</td> <td>3</td> </tr> <tr> <td><b>Course total</b></td> <td><b>75</b></td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester workload</i>	Lectures (2 h X 13 wks)	26	Project, essay writing (3,46h X13 wks)	45	Project Essay Presentation(1h/13 wks)	1	Final exam (3h/13wks)	3	<b>Course total</b>	<b>75</b>
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<b>Course total</b>	<b>75</b>												
<p><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Problem solving, written work, essay/report, oral examination, public presentation.</p> <p>The evaluation will be done in Greek unless there is necessity for an evaluation in English because of the presence of foreign students.</p> <p>Evaluation procedure:</p> <table border="1" data-bbox="589 1415 1243 1528"> <tbody> <tr> <td>Written Project Essay &amp; Presentation</td> <td>50%</td> </tr> <tr> <td>Final Exams</td> <td>50%</td> </tr> </tbody> </table> <p>Minimum Acceptable (promotable) Grade: 5 ( Rating Scale :0-10)</p> <p>In the case of evaluation failure, the exams will be repeated. The evaluation grades of the written essay will be valid for the next two (2) years, meaning four (4) semesters from the typical semester taught.</p>	Written Project Essay & Presentation	50%	Final Exams	50%								
Written Project Essay & Presentation	50%												
Final Exams	50%												

#### 5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

-Soto D., J. Aguilar-Manjarrez and N. Hishamunda (eds). 2008. Building an ecosystem approach to aquaculture. FAO/Universitat de les Illes Balears Expert Workshop. 7–11 May 2007, Palma de Mallorca, Spain. *FAO Fisheries and Aquaculture Proceedings*. No. 14. Rome, FAO. pp. 15–35.

-Barry A. Costa-Pierce (2002). *Ecological Aquaculture: The Evolution of the Blue Revolution* ISBN: 978-0-632-04961-5 June 2002 Wiley-Blackwell 400 Pages

-Bohnes F.A, M. Z. Hauschild, J. Schlundt, A. Laurent (2018). Life cycle assessments of aquaculture systems: a critical review of reported findings with recommendations for policy & system development. *Reviews in Aquaculture*, 1–19 doi: 10.1111/raq.12280

- Bregnballe J. 2015. *A Guide to Recirculation Aquaculture. An introduction to the new environmentally friendly & highly productive closed fish farming systems.* FAO-EUROFISH 100pp.

*Related academic journals:*

- Biological Agriculture & Horticulture
- Journal of Clean Production
- Oikos