

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Biosystems & Agricultural Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	BAE 810	SEMESTER	8 th
COURSE TITLE	APPLICATIONS OF CIRCULAR ECONOMY IN AGRICULTURE		
INDEPENDENT TEACHING ACTIVITIES <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>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	3		
Tutorials	2		
Laboratory			
TOTAL	5	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General Background Specialised general knowledge		
PREREQUISITE COURSES:	There are no prerequisite courses.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek .-For Erasmus students in English		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>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.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 																		
<p>The student, at the end of the relevant Learning Process, is able to</p> <p>To understand the application of the Circular Economy in agriculture. and the agri-food sector</p> <p>To recognize the benefits of changing the prevailing model of the linear economy and waste of resources</p> <p>To devise innovative practices and new directions in sustainable agriculture and animal husbandry</p>																		
<p>General Competences</p> <p><i>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></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td style="width: 50%; border: none;"><i>Project planning and management</i></td> </tr> <tr> <td style="border: none;"><i>Adapting to new situations</i></td> <td style="border: none;"><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td style="border: none;"><i>Decision-making</i></td> <td style="border: none;"><i>Respect for the natural environment</i></td> </tr> <tr> <td style="border: none;"><i>Working independently</i></td> <td style="border: none;"><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td style="border: none;"><i>Team work</i></td> <td style="border: none;"><i>Criticism and self-criticism</i></td> </tr> <tr> <td style="border: none;"><i>Working in an international environment</i></td> <td style="border: none;"><i>Production of free, creative and inductive thinking</i></td> </tr> <tr> <td style="border: none;"><i>Working in an interdisciplinary environment</i></td> <td style="border: none;">.....</td> </tr> <tr> <td style="border: none;"><i>Production of new research ideas</i></td> <td style="border: none;"><i>Others...</i></td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">.....</td> </tr> </table>	<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>Production of new research ideas</i>	<i>Others...</i>	
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At the end of this course the student will have further developed the following skills (general abilities):

- Ability to demonstrate knowledge and understanding of concepts and applications related to the circular economy.
- Ability to use management tools that increase productivity and annual farm income) prevalent in EU countries.
- Study skills needed for continued professional development.
- Ability to interact with others on problems of an interdisciplinary nature.

More generally, upon completion of this course the student will have further developed the following general competencies (from the list above):

Search, analysis and synthesis of data and information, also using the necessary technologies
Search, analysis and synthesis of data and information, using the necessary technologies
Adaptation to new situations
Decision making
Autonomous work
Teamwork
Respect for the natural environment
Exercise criticism and self-criticism

(3) SYLLABUS

Definitions. Principles of circular economy. Basic applications. Institutional framework. The principle of sustainability in national, European and global becoming. Geographical dimension of the economy. Circular Economy and Innovation in Agriculture and the agri-food sector. Creating agricultural businesses in the circular economy. Industrial organization and symbiotic relations in production. Innovative practices and new directions in sustainable agriculture and animal husbandry (bio-crops, alternative crops, new crops, innovative management tools) Social and economic environment. Analysis and assessment of the dynamics of the circular economy. Global exchange and circulation of energy, products and raw materials .Life cycle analysis.Product Ecolabel.Green Labels.

(4) TEACHING and LEARNING METHODS - EVALUATION

<p>DELIVERY <i>Face-to-face, Distance learning, etc.</i></p>	<p>Face to face deliveries. Laboratory exercises in Physical Chemistry</p>	
<p>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<ul style="list-style-type: none"> • Use of ICT (power point) in Teaching • Use of ICT (power point) in Laboratory Training • Use of ICT in Communication with students (Learning process support through the electronic platform e-class). 	
<p>TEACHING METHODS <i>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</i></p>	<p><i>Activity</i></p>	<p><i>Semester workload</i></p>
	<p>Lectures</p>	<p>39</p>
	<p>Tutorials</p>	<p>20</p>
	<p>Project work</p>	<p>21</p>
	<p>Study hours and preparation for the laboratory exercises and the final examination</p>	<p>45</p>
<p>STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p>	<p>2. The main assessment criteria focus on understanding and correlating the knowledge that students gain from the course with other knowledge. Particular emphasis is placed on whether they have developed the ability to apply this knowledge to crop</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> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>selection and to assess the impact of these changes on the environment. Emphasis is also placed on demonstrating critical ability and justifying the choices they make in each problem.</p> <p>3. Evaluation is dynamic. It mainly involves problem solving. is done orally or in writing or with a combination of the two, with or without pre-examination on the basic principles of the course, with or without exculpatory advances and with other test or inventive methods, depending on the composition of the dynamics and the needs of the audience.</p> <p>4. The above are done in the Greek language. For foreign language students (eg Erasmus students) conducted in English</p>
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(5) RECOMMENDED LITERATURE in Greek

Suggested bibliography:

- **Βιβλίο [59415066]: ΒΙΟΤΕΧΝΟΛΟΓΙΑ ΦΥΤΩΝ, Πολυδεύκης Χατζόπουλος [Λεπτομέρειες](#)**
- **Βιβλίο [77119689]: ΜΟΡΙΑΚΗ ΒΙΟΛΟΓΙΑ ΑΝΑΠΤΥΞΗΣ ΦΥΤΩΝ, Κρίτων Καλαντίδης, Δήμητρα Μηλιώνη, Καλλιόπη Παπαδοπούλου, Σταμάτης Ρήγας, Ανδρέας Ρούσσης, Κοσμάς Χαραλαμπίδης, Πολυδεύκης Χατζόπουλος [Λεπτομέρειες](#)**
- **Βιβλίο [2625]: ΑΝΑΣΥΝΔΥΑΣΜΕΝΟ DNA, James D. Watson κ.α. [Λεπτομέρειες](#)**

-Complementary bibliography:

- Plant Biotechnology, Slater A., Nigel W.S, Fowler M.R., Oxford University Press, 2003.

