COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGR_711	**SEMESTER**	7th
COURSE TITLE	Informatics In Agricultural Sciences		

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**
lectures	3	
laboratory exercises	2	
TOTAL	5	5
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*	Specialised general knowledge, skills development
PREREQUISITE COURSES:	Typically, there are no prerequisite courses.
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek. Teaching may be performed in English in case foreign students attend the course.
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (in English)
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*

The aim of the course is the understanding and practical application of the basic concepts, methods and tools of information technology in agriculture. Upon successful completion of the course, students will be able to monitor the continuous developments of this interdisciplinary field and use the IT tools :

- computer systems,
- core network components,
- wireless sensor network applications,
- information and communication technologies to solve agricultural problems.

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…*

By the end of this course the student will, moreover, have developed the following skills (general abilities):
• Ability to demonstrate knowledge and understanding of key data, concepts, theories and applications related to Informatics in Agricultural Sciences.

• Ability to apply this knowledge and understanding to the solution of problems of non-familiar nature.
• Ability to adopt and apply methodology to solve non-familiar problems.
• Study skills needed for continuing professional development.
• Ability to interact with others in natural or interdisciplinary problems.

Generally, by the end of this course the student will, furthermore, have developed the following general abilities (from the list above):

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Criticism and self-criticism
Teamwork
Production of free, creative and inductive thinking
Respect for the natural environment

3. SYLLABUS

Theory

1. Use of information technologies in agriculture
2. Historical review of computer technology and review of agricultural technologies
3. Information and communication technologies in the agricultural environment
4. Information and information data
5. Numerical systems
6. Structure, hierarchical organization and categories of computer systems
7. Basic network components
8. Advanced Computer Applications for Agriculture
9. Sensors Applied in Agricultural crops
10. Automation technologies in agriculture
11. Robotics applications in agricultural crops
12. Applications of computerized agricultural machinery to crops
13. Geomatics and Remote Sensing (Geographical Information System (GIS), Global Navigation Satellite System (GNSS))

Laboratory Exercises

- Operating systems and computer networks
- Advanced techniques
- Introduction to the Internet
- Information search
- Computer software applications for modeling experimental data
- Exploitation of the Internet in agricultural production
- Computer applications in agricultural production

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face (Lectures in the class, lab exercises)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Power point presentations, i-books, videos, Educational process is supported by the online platform eclass.
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.*	

	Semester workload
Lectures (3 contact hours per week x 13 weeks)	39
Laboratory exercises (2 contact hours per week x 7 weeks)	14

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	Written assignment	15	
	Hours for private study of the student and preparation for mid-term or/and final examination – Participation in the examinations	57	
	Course total	**125 hours**	

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.*	i. Written final examination of the lesson. Minimum probable grade: 5. The examination in the laboratory part of the course includes short answer questions /or multiple-choice questionnaires and/or oral examination, as well as questions based on laboratory exercises. i. All the above are taking place in the Greek language and for the foreign students (e.g. ERASMUS students) in English. i. Oral examination can be made to students who have written tests on the same day and time that the progress or written examination of the course will take place. v. Theory: Final Exam (50%). Final Exam, written or oral, of increasing difficulty, which may include Multiple choice test, questions of short answers, questions on topic development, open-ended questions, essay and exercise solving. v. Laboratory: Final Exam on laboratory syllabus (50%). The final Course mark is the average of the marks on Theory and Lab.

5. ATTACHED BIBLIOGRAPHY

- Laudon, KC and Traver, CG, (2013). E-commerce. 9th Eds Pearson Prentice Hall. 34 Gelb E, and Offer A, (2005). ICT in agriculture: perspectives of technological innovation. Ebook composed under the auspices of and supported by the European Federation for Information Technologies in Agriculture, Food and the Environment (EFITA) and the Samuel Neaman Institute for Advanced Studies in Science and Technology.
- Sonka ST, Bauer ME, Cherry ET, Colburn JW, Heimlich RE, Joseph DA, Leboeuf JB, Lichtenberg E, Mortensen DA, Searcy SW, Ustin SL and SJ Ventura. (1997) Precision Agriculture in the 21st Century: Geospatial and information technologies in crop management. National Academy Press Washington.
- Μάνος Β, Μπουρνάρης Θ (2010). Εφαρμογές και νέες τεχνολογίες πληροφορικής Αθήνα Εκδόσεις Ζήτη σελ.224 .
- Τσακνάκης Ι και Φλώρος Α, (2007). Εισαγωγή στις Τεχνολογίες της Πληροφορικής και των Επικοινωνιών. Αθήνα: Εκδόσεις Κλειδάριθμος. σελ.229 .