COURSE OUTLINE

1. GENERAL

SCHOOL	ENVIRONMENT AND AGRICULTURAL ENGINEERING		
ACADEMIC UNIT	NATURAL RESOURCES DEVELOPMENT & AGRICULTURAL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**174**	**SEMESTER**	6th
COURSE TITLE	INFORMATION TECHNOLOGY APPLICATIONS IN AGRICULTURE		

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	2	2
LABORATORY EXERCISES	2	2
TOTAL	4	4
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:	INFORMATION TECHNOLOGY AND PROGRAMMING
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	To be constructed

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*

Upon successfully completing the course, the student(s) will be able to:

• Understand the basic methods and programming techniques used in the implementation of information systems in Agriculture.

• Recognize the business role of information systems in the agricultural sector as a tool for supporting and promoting the business operation and management of both production units and related services.

• Study, evaluate and develop software related to applications in the agricultural sector.

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
Applying theoretical knowledge in practice
Working independently
Teamwork
Working in an interdisciplinary environment
Decision-making
Production of free, creative and inductive thinking

3. SYLLABUS

- Information, information system, components of an information system, cycle, requirements analysis in the agri-food sector.
- Principles of operation and programming of computer integrated manufacturing (CIM).
- Strategic importance and international trends in the development of information systems in agriculture.
- Information model of agricultural exploitation.
- Analysis and design of information systems in the field of agriculture.
- Evaluation of alternative technologies and implementation methods.
- Flow and exchange of information in applications in the agri-food sector.
- Management of changes during the development and implementation of information systems in the agri-food sector.
- Modeling of goals, data, functions.
- User interfaces for information systems in agriculture.
- Management of information system development in agriculture through development methods.
- Hardware and software for applications in the agri-food sector. Computers in agricultural production. Availability of computing systems. Information Systems for Equipment Maintenance.
- Programming languages, software engineering tools.
- Real-time programs and databases. Communications and synchronization. Mathematical models and simulation. Virtual reality in agriculture.
- Software development technologies and standards for open architecture systems in the agri-food sector. Operating systems. Field controls. Resource management systems. Quality assurance.
- Computer networks in the agri-food sector and wireless networks.
- Conceptual System Modeling
- Design and construction of complex information systems in the agri-food sector.

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 Laboratory education Communication with students
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*	
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.*	1. Written Examination (Conclusion on Theory): 100% 2. Technical laboratory reports: 40%. 3. Oral Examination in laboratory environment: 60%.

Activity	*Semester workload*
Lectures	60
Laboratory practice	60
Course total	***120***

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Related academic journals:

1. Roberto King, "Industrial Informatics", Tziola Editions, 2003.
2. George Hasapis, "Architecture and Programming of Industrial Control Systems", Ziti Editions.
3. A. Veloni - S. Alatsathianos, "Industrial Informatics", Self-published - February 2014.

4. Andreopoulou, Z., Manos, B., Viaggi, D. and Polman, N. (Editors) 2011. Agricultural and environmental Informatics, governance, and management: Emerging research applications. IGI Global. USA.