COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Biosystems & Agricultural Engineering		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**BAE_705**	**SEMESTER**	**7th**
COURSE TITLE	**INTEGRATED PLANT PROTECTION SYSTEMS**		

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	
Tutorials	2	
Laboratory	0	
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*	Background and Scientific Area
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

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 course aims to educate students on a theoretical and practical level on issues of integrated treatment of pests and diseases in crops, by applying modern, environmentally friendly methods resulting from the combined action of biological and chemical methods of treatment. The importance of developing disease prognosis models in the treatment of major diseases within the principles of Precision Agriculture is also presented.

At the end of this course student will be able to understand:

• the main axes that govern the integrated fight against pests and diseases

• the importance of the application of biological methods dealing with pests and diseases

• the logic and the general objectives of the implementation of an integrated plant protection system.

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
Adapting to new situations
Decision-making
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and

Working independently	*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…*
	…….

At the end of this course the student will have further developed the following general skills:
Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Production of new research ideas
Respect for the natural environment
Criticism and self-criticism
Production of free, creative and inductive thinking

(3) SYLLABUS

1. Principles and strategies of integrated treatment of diseases (cultural, biological, chemical measures).
2. Chemical control (selection of appropriate plant protection products in integrated control systems).
3. Risk of resistance to new chemical compounds. Ways to deal with pathogen resistance in plant protection products.
4. Biological treatment of pests and diseases of plants (Action Mechanisms of biological agents).
5. The role of biostimulants and biofertilizers in the integrated treatment of diseases.
6. The importance of resistant or tolerant varieties in integrated plant protection systems.
7. Soil disinfection of the soil.
8. Integrated treatment of pests and diseases in new cultivation systems (hydroponics, aeroponics, etc.).
9. Precision Agriculture applications in integrated plant protection systems.
10. Disease prognosis models.
11. Decision Support Systems (DSS) for integrated control of pests and diseases.

Tutorial exercises
Tutorial exercises aim to familiarize students with concepts and methodologies that are analyzed in the theoretical part. Specifically, the identification of the main diseases and the treatment under the framework of the principles of integrated plant protection are analyzed in more detail.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures in the amphitheatre and laboratory exercises both in the laboratory and in the field.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Use of ICT (power point) in Teaching • Use of ICT (power point) in Tutorial Training • Use of ICT in Communication with students (Learning process support through the electronic platform e-class).
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*	

Activity	***Semester workload***
Lectures	39
Tutorials	20
Writing short reports of laboratory exercises- Exams	21
Study hours and preparation for the laboratory exercises and the final examination	45
Course total	***125***

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.The examination in the theory of the course is done with a comprehensive questioner or a multiple choice questioner that focus on the understanding of the course giving weight to the student's critical ability. 3. Oral exams may take place in cases of students who have been exempted from the writing exams and always the same time and day as the writing exams. 4. The above are done in the Greek language. For foreign language students (eg Erasmus students) conducted in English

(5) ATTACHED BIBLIOGRAPHY (In Greek)

- Suggested bibliography:

1. Μπρούφας Γ., Παππά Μ., 2016. Ολοκληρωμένη καταπολέμηση εχθρών των καλλιεργειών. Αρχές και μέθοδοι.
2. Λυκουρέσης Δ. 1995. Ολοκληρωμένη Αντιμετώπιση Εντόμων-Εχθρών Καλλιεργειών Heinz K.M., Parrella M.P. and Van Driesche R.M. 2004. Biocontrol in Protected Culture.
3. Radcliffe, E.B., Hutchison W.D and Cancelado R.E. 2008. Integrated Pest Management Concepts, Tactics, Strategies and Case Studies.
4. Jervis, M.A. 2006. Insects as Natural Enemies A Practical Perspective.
5. Dent D.R and Walton M.P. 1997. Methods in Ecological and Agricultural Entomology.