COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	AGRICULTURE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	AGRI_502	**SEMESTER OF STUDIES**	5th
COURSE TITLE	PLANT PROTECTION PRODUCTS		

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	
Laboratory exercises	2	
Total	4	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (4).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialised general knowledge
PREREQUISITE COURSES:	Typically, there are no prerequisite courses.
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek.
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBPAGE (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*

By the end of this course the student will have developed the following skills (general abilities):

- be able to judge the benefits and risks arising from the use of plant protection products
- describe the different categories of plant protection products based on the target organism and their biochemical mode of action.
- recognize and evaluate the various forms of plant protection products
- identify and understand the information on the label of plant protection products.
- make necessary calculations for the precise application of plant protection products.
- be familiar with the personal necessary protective equipment for plant protection product applications and have understood the necessity of their use.

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

Respect for difference and multiculturalism

Adapting to new situations *Decision-making* *Working independently* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*Respect for the natural environment* *Showing social, professional and ethical responsibility and sensitivity to gender issues* *Criticism and self-criticism* *Production of free, creative and inductive thinking* *……* *Others…* *…….*
Generally, by the end of this course the student will, furthermore, have develop the following general abilities (from the list above): *Searching, analysis and synthesis of facts and information, as well as using the necessary technologies* *Decision making* *Autonomous (Independent) work* *Respect for the Environment* *Criticism and Self-criticism* *Promotion of free, creative and inductive thinking*	

3. SYLLABUS

1. Nomenclature, definitions and terminology in the field of Agricultural Pharmacology.
2. Historical review of the discovery and use of Plant Protection Products (PI) and biocides.
3. Labels and legislation.
4. Standardization and methods of handling and application.
5. Classification and description based on the target organism (eg insecticides, fungicides, herbicides) and their uses (seed, soil, spraying, etc.).
6. Toxicological Properties and personal protective equipment.
7. Ecotoxicity, impact on the environment and residues in agricultural products.
8. Selectivity and toxicity.
9. Classification and description of insecticides (acaricides and nematicides) based on the biochemical mode of action
10. Classification and description of fungicides based on their biochemical mode of action.
11. Classification and description of herbicides based on their biochemical mode of action.
12. Classification and description of plant regulating compounds.
13. Classification and description of biocides.

Laboratory exercises:

1. Selecting the appropriate plant protection product.
2. Analysis and decoding of the plant protection product label.
3. Dose Calculation Problems.
4. Rational use of plant protection products.
5. Hygiene and safety rules for the preparation and application of plant protection products.
6. Management of packaging and residues of plant protection products.

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Lectures, self-tests of students and problem-solving seminars.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. The contents of the course of each chapter are uploaded on the internet, in the form of a series of pdf files that the students can freely download using a password which is provided to them at the beginning of the course.
TEACHING METHODS *The manner and methods of teaching are described in detail.*	

Activity	***Semester workload***
Lectures (2 contact hours per week x 13 weeks)	26

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*	Laboratory work (2 contact hours per week x 6 weeks)	12
	Project	12
	Hours for private study of the student, preparation and attendance mid-term or/and final examinations.	75
	Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125 hours (total student work-load)***
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. Mandatory written examination, with full length questions and / or multiple choice questions, as well as questions based on the laboratory work. Minimum pass grade= 5, scale 0-10. Total degree contribution 80%. 2. Mandatory assignment, maximum evaluation degree = 2. Total degree contribution 20%. 3. Final degree = sum 1+2. 4. All the above are conducted in Greek.	

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Matthews G. 2016. Pesticides: Health, Safety and the Environment 2nd Edition. Wiley-Blackwell.
2. Stenersen J. 2004. Chemical Pesticides Mode of Action and Toxicology, 1st Edition. CRC Press.

- Related academic journals:

1. Hellenic Plant Protection Journal. Benaki Phytopathological Institute
2. Crop Protection. Elsevier.