

ADVANCE PLANT PROTECTION I

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
ACADEMIC UNIT	CROP SCIENCE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	CRS_602	SEMESTER	6 th
COURSE TITLE	Advance Plant Protection I		
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		2	
Tutorials		1	
Laboratory		2	
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>	Specialised general knowledge		
PREREQUISITE COURSES:	General phytopathology.		
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		
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>After successful completion of the course, students will understand advance in crop protection science and field practice. Furthermore, the student will be able to understand:</p> <ul style="list-style-type: none"> • Understand biology and microbial pathogenicity of major horticultural plant diseases (fungal, procaryotic, viral). • Understand biology major horticultural pests. • Detect symptoms and related symptoms to pests and diseases. • Understand pest and disease epidemiology and outbreaks • Know detection techniques and provide control pest / disease management plan. • Use novel tools for updating their background information on horticulture pests and diseases.
<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> <p><i>Search for, analysis and synthesis of data and</i> <i>Project planning and management</i></p>

<i>information, with the use of the necessary technology</i>	<i>Respect for difference and multiculturalism</i>
<i>Adapting to new situations</i>	<i>Respect for the natural environment</i>
<i>Decision-making</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Working independently</i>	<i>Criticism and self-criticism</i>
<i>Team work</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an international environment</i>	<i>.....</i>
<i>Working in an interdisciplinary environment</i>	<i>Others...</i>
<i>Production of new research ideas</i>	<i>.....</i>
<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	
<i>Adapting to new situations</i>	
<i>Decision-making</i>	
<i>Working independently</i>	
<i>Team work</i>	
<i>Respect for the natural environment</i>	
<i>Criticism and self-criticism</i>	

3. SYLLABUS

1. Major hemipteran pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 2. Major collembolan and orthopteran pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 3. Major coleopteran and thysanoptera pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 4. Major dipteran and hymenopteran pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 5. Major lepidopteran pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 6. Major plant parasitic nematode pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 7. Major acari pests attacking vegetable and pomological species. Description, hosts, geographic distribution, biology, damages and pest control.
 8. Major fungal diseases of vegetable and pomological species. Description, hosts, geographic distribution, life cycle, damages and disease control.
 9. Major procaryotic diseases of vegetable and pomological species. Description, hosts, geographic distribution, life cycle, damages and disease control.
 10. Major viral diseases of vegetable and pomological species. Description, hosts, geographic distribution, life cycle, damages and disease control.
 11. Major non parasitic diseases of vegetable and pomological species. Description, hosts, geographic distribution, life cycle, damages and disease control.
 12. Natural enemies and integrated pest / disease management of vegetable and pomological species.
 13. Major postharvest diseases of vegetable and pomological species. Description, hosts, geographic distribution, life cycle, damages and disease control.
- Lab practice:
- Handling and processing samples, observation, symptom description, detection of infestation cause (pest/disease) for vegetable and pomological species.
1. Examination of fungal infected plants.
 2. Examination of bacterial and viral infected plants
 3. Examination of infested plants by insects and acari pests.
 4. Examination of infested plants by plant parasitic nematodes.
 5. Postharvest infections on fruits and vegetables.

6. Examination of non parasitic diseases on vegetable crops and fruits.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face lectures and laboratory exercises.	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	<ul style="list-style-type: none"> • Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. • Use of ICTs in student communication (learning support through the e-class platform). 	
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>	Activity	Semester workload
	Lectures (2 conduct hours per week x 13 weeks)	26
	Lab Practice (2 conduct hour per week x 6 weeks)	12
	Tutorial (1 conduct hours per week x 13 weeks)	13
	Assignments	3
	Private study time of the students for the lab preparation and final examination - Participation in the examinations	71
	Course total (25 work load for each ECTS credit)	125
STUDENT PERFORMANCE EVALUATION <i>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>	<p>Student performance evaluation will be explained to the students at the beginning of the course/beginning of the semester.</p> <p>1.Mandatory final written examination for lectures / theoretical part of the course, comprises 60% of the final mark of the student. 2.Mandatory final written examination for the transferred laboratory skills of the course, comprises 40% of the final mark of the student.</p> <p>Minimum pass mark: 5 (full scale: 0-10) The above mentioned process will be taking place in Greek and for foreign students (eg ERASMUS students) in English.</p>	

5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Bockus W.W., Bowden R.L., Hunger R.M., Morrill W.L., Murray T.D., and Smiley R.W. Compendium of wheat diseases and pests Third Edition. 2010. APS Press.
2. Chattopadhyay C., Kolte S. J., Waliyar F.2014. Diseases of Edible Oilseed Crops, 1st Edition. CRC Press.
3. Greenwood P, Halstead A. 2018. RHS Pest & Diseases. DK Press.
4. Hartman G.I., Rupe J.C., Sikora E.J., Domier L.L., Davis L.A., Steffey K.L. 2015. Compendium of Soybean Diseases and Pests, Fifth Edition. APS Press.
5. Schwartz H.F., Steadman J.R., Hall R., Forster R.L. 2005. Compendium of Bean Diseases, Second Edition. APS Press.
6. Watson G. 2013. Tree Pests and Diseases - An Arborists' Field Guide. [The Arboricultural Association](#) Press.
7. Wilcox W.F., Gubler W.D., Uyemoto J.K. 2015. Compendium of Grape Diseases, Disorders, and Pests, 2nd Edition. APS Press.

8. Βαγγέλας Ι. Λεοντόπουλος Σ. Γραβάνης Φ. 2010. Φυτοπροστασία Φυτών Μεγάλης Καλλιέργειας. Εκδόσεις Νικόλαος Ι. Ριζάκης.
9. Ζαρταλούδης Ζ. 2006. Αντιμετώπιση Εχθρών και Ασθενειών της ελιάς. ΕΚΔΟΣΕΙΣ ΓΕΡΜΑΝΟΥ ΦΩΤΕΙΝΗ
10. Θανασουλόπουλος Κ. Κ. 1996. Μυκητολογικές ασθένειες δένδρων και αμπέλου. 2^η Έκδοση. ΕΚΔΟΣΕΙΣ Ζήτη Πελαγία & Σια Ι.Κ.Ε.
11. Θανασουλόπουλος Κ. Κ. 1996. Μυκητολογικές ασθένειες φυτών μεγάλης καλλιέργειας. Εκδόσεις Ζήτη Πελαγία & Σια Ι.Κ.Ε.
12. Κατής Ν. Αυγελής Α. 1997. Ιολογικές ασθένειες φυτών μεγάλης καλλιέργειας. Εκδόσεις ΑΓΡΟΤΥΠΟΣ Α.Ε.
13. Ναβροζίδης Ε.Ι., Ανδρεάδης Σ.Σ. 2012. Ειδική Γεωργική Εντομολογία. Εκδόσεις COPY CITY Ι.Κ.Ε.
14. Παναγόπουλος Χ. Γ. 2000. Ασθένειες κηπευτικών καλλιεργειών. 2η έκδοση. ΕΚΔΟΣΕΙΣ ΣΤΑΜΟΥΛΗ ΑΕ.
15. Παναγόπουλος Χ. Γ. 2003. Ασθένειες καλλωπιστικών φυτών. ΕΚΔΟΣΕΙΣ ΣΤΑΜΟΥΛΗ ΑΕ.
16. Παναγόπουλος Χ. Γ. 2007. Ασθένειες καρποφόρων δένδρων και αμπέλου. 4^η Έκδοση. ΕΚΔΟΣΕΙΣ ΣΤΑΜΟΥΛΗ ΑΕ
17. Ρούμπος Ι. Χ. 2015. Ασθένειες και εχθροί της αμπέλου. 6^η Έκδοση. ΕΚΔΟΣΕΙΣ ΣΤΑΜΟΥΛΗ Α.Ε.
18. Σταμόπουλος Δ. Κ. 1995. Έντομα αποθηκών μεγάλων καλλιεργειών και λαχανικών. 2η έκδοση. ΕΚΔΟΣΕΙΣ Ζήτη Πελαγία & ΣΙΑ Ι.Κ.Ε.
19. Τζανακάκης Μ., Κατσόγιαννος Β. Έντομα Καρποφόρων δέντρων και αμπέλου. 2003. ΕΚΔΟΣΕΙΣ ΑΓΡΟΤΥΠΟΣ Α.Ε.

Related academic sources and journals:

1. Crop Protection.
2. Hellenic Plant Protection Journal. Benaki Phytopathological Institute
3. Journal of Applied Horticulture
4. Journal of Pest Science
5. Plant Disease.