

## ADVANCED PLANT PATHOLOGY II

### 1. GENERAL

<b>SCHOOL</b>	AGRICULTURAL SCIENCES		
<b>ACADEMIC UNIT</b>	CROP SCIENCE		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	CRS_700	<b>SEMESTER OF STUDIES</b>	7 <sup>th</sup>
<b>COURSE TITLE</b>	Advanced Plant Pathology II		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <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>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
	Lectures	2	
	Tutorials	1	
	Laboratory exercises	2	
	<b>Total</b>	5	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (4).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Specialized general knowledge, skills development		
<b>PREREQUISITE COURSES:</b>	Typically, there are no prerequisite courses.		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek.		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	No		
<b>COURSE WEBPAGE (URL)</b>			

### 2. LEARNING OUTCOMES

<p><b>Learning outcomes</b> <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. Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>• Guidelines for writing Learning Outcomes</li> </ul>										
<p>By the end of this course the student will have developed the following skills (general abilities):</p> <ul style="list-style-type: none"> <li>• Understand - comprehend the biology and manifestation of diseases (fungal, prokaryotic, viral, non-parasitic) of agriculture.</li> <li>• Understand - comprehend the symptomatology and etiology of their occurrence and dissemination.</li> <li>• Understand - comprehend epidemiology, diagnosis and treatment.</li> <li>• Know how to be informed on cutting-edge issues about plant diseases.</li> </ul>										
<p><b>General Competences</b> <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> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td style="width: 50%; border: none;"><i>Project planning and management</i></td> </tr> <tr> <td style="border: none;"><i>Adapting to new situations</i></td> <td style="border: none;"><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td style="border: none;"><i>Decision-making</i></td> <td style="border: none;"><i>Respect for the natural environment</i></td> </tr> <tr> <td style="border: none;"><i>Working independently</i></td> <td style="border: none;"><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> <tr> <td style="border: none;"><i>Team work</i></td> <td style="border: none;"><i>Criticism and self-criticism</i></td> </tr> </table>	<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>	<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>	<i>Decision-making</i>	<i>Respect for the natural environment</i>	<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>	<i>Team work</i>	<i>Criticism and self-criticism</i>
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<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>									
<i>Team work</i>	<i>Criticism and self-criticism</i>									

<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	.....
<i>Production of new research ideas</i>	<i>Others...</i>
	.....

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

*Decision making*  
*Autonomous (Independent) work*  
*Respect for the Environment*  
*Promotion of free, creative and inductive thinking*

### 3. SYLLABUS

<p>Description, hosts, geographical distribution, biology - disease cycles, ecology, economic significance, symptomatology and methods of coping with pests and diseases in crops:</p> <ol style="list-style-type: none"> <li>1. Winter cereals (Wheat, Barley, Oat, Rye, Triticale)</li> <li>2. Spring cereals (corn, rice, sorghum, millet)</li> <li>3. Tobacco</li> <li>4. Potato</li> <li>5. Cotton</li> <li>6. Beet</li> <li>7. Asparagus</li> <li>8. Winter legumes (lentil, pea, chickpea, Vicus, Vicia, Lathyrus)</li> <li>9. Spring legumes (bean, peanut, soy)</li> <li>10. Vegetable oil and biodiesel producing plants and Fiber crops</li> <li>11. Aromatic and medicinal plants</li> <li>12. Natural enemies and integrated management of pests and diseases of arable crops.</li> <li>13. Post-harvest pests and diseases of plant products of arable crops.</li> </ol> <p>Laboratory exercises:</p> <p>Sample processing, observation, description of symptoms, identification of disease agent of arable crops:</p> <ol style="list-style-type: none"> <li>1. Affected by plant pathogenic fungi.</li> <li>2. Affected by plant pathogenic bacteria and viruses.</li> <li>3. Affected by insects and mites.</li> <li>4. Affected by plant parasitic nematodes.</li> <li>5. Affected by post-harvest pests and diseases.</li> <li>6. Showing non-parasitic diseases.</li> </ol>
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### 4. TEACHING AND LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Lectures, self-tests of students and problem-solving seminars.	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	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.	
<b>TEACHING METHODS</b> <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>	<b>Activity</b>	<b>Semester workload</b>
	Lectures (3 contact hours per week x 13 weeks)	39
	Field trip	7
	Laboratory work (2 contact hours per week x 6 weeks)	12
	Hours for private study of the student, preparation and attendance mid-term or/and final examinations.	67

	<b>Total number of hours for the Course (25 hours of work-load per ECTS credit)</b>	<b>125 hours (total student work-load)</b>
<p align="center"><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><i>Description of the evaluation procedure</i></p> <p><i>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</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<ol style="list-style-type: none"> <li>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.</li> <li>2. Total degree contribution 100%.</li> <li>3. All the above are conducted in Greek.</li> </ol>	

## 5. ATTACHED BIBLIOGRAPHY

<p><i>Suggested bibliography:</i></p> <ol style="list-style-type: none"> <li>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.</li> <li>2. Chattopadhyay C., Kolte S. J., Waliyar F.2014. Diseases of Edible Oilseed Crops, 1st Edition. CRC Press.</li> <li>3. Greenwood P, Halstead A. 2018. RHS Pest &amp; Diseases. DK Press.</li> <li>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.</li> <li>5. Schwartz H.F., Steadman J.R., Hall R., Forster R.L. 2005. Compendium of Bean Diseases, Second Edition. APS Press.</li> </ol> <p><i>Related academic journals:</i></p> <ol style="list-style-type: none"> <li>1. Crop Protection.</li> <li>2. Hellenic Plant Protection Journal. Benaki Phytopathological Institute</li> <li>3. Journal of Applied Horticulture</li> <li>4. Journal of Pest Science</li> <li>5. Plant Disease.</li> </ol>
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