

COURSE OUTLINE

1. GENERAL INFORMATION

FACULTY/SCHOOL	SCHOOL OF PLANT SCIENCES		
DEPARTMENT	CROP SCIENCE		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	1855	Semester:	5
COURSE TITLE	PHYTOPATHOLOGY		
INDEPENDENT TEACHING ACTIVITIES <i>in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	ECTS
Lectures		3	3
Laboratory Exercises		2	2
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4			
COURSE TYPE Background knowledge, Scientific expertise, General Knowledge, Skills Development	Scientific expertise		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION:	Greek		
LANGUAGE OF EXAMINATION/ASSESSMENT:			
THE COURSE IS 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 (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:

APPENDIX A

- Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.
- Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and

APPENDIX B

- Guidelines for writing Learning Outcomes

On completion of this course, students should be able to:

- Identify disease symptoms
- Recognize major plant pathogens on plant tissues and/or under light microscope
- Describe the morphology, reproduction, taxonomy and diseases caused by Fungi and Oomycetes
- Describe the ecology, spread, symptoms and control of plant pathogenic bacteria
- Explain the transmission, detection, identification and control of plant viruses
- Outline the events of plant – pathogen interactions
- Describe the factors that influence the disease outcome

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies,

Adapting to new situations

Decision-making

Individual/Independent work

Group/Team work

Working in an international environment

Working in an interdisciplinary environment

Introduction of innovative research

Project planning and management

Respect for diversity and multiculturalism

Environmental awareness

Social, professional and ethical responsibility and sensitivity to gender issues

Critical thinking

Development of free, creative and inductive thinking

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(Other.....citizenship, spiritual freedom, social awareness, altruism etc.)

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Individual/Independent work

Critical thinking

Development of free, creative and inductive thinking

3. COURSE CONTENT

THEORY

1. The concept of Disease
2. Disease Symptoms
3. Plant Diseases caused by Fungi and Oomycetes
 - Characteristics of plant pathogenic fungi and oomycetes
 - Morphology
 - Reproduction
 - Taxonomy
 - Diseases caused by Oomycetes
 - Diseases caused by Fungi
4. Plant Diseases caused by Bacteria
 - Characteristics of plant pathogenic bacteria
 - Morphology
 - Reproduction
 - Ecology and spread
 - Identification
 - Symptoms
 - Control of bacterial diseases of plants
5. Plant diseases caused by Phytoplasmas and Spiroplasmas
6. Plant Diseases caused by Viruses
 - Transmission of plant viruses
 - Detection and identification
 - Epidemiology of plant viruses
 - Control of plant viruses
7. Plant diseases caused by Viroids
8. Environmental factors that cause plant diseases
 - Temperature effects
 - Nutritional deficiencies in plants
 - Air pollution
 - Soil minerals toxic to plants
9. How pathogens attack plants
 - Mechanical forces
 - Chemical weapons of pathogens

10. How plants defend themselves against pathogens Preexisting defenses Induced defenses 11. Plant Disease epidemiology 12. Control of plant diseases LABORATORY -CHROMISTA Family <i>Pythiaceae</i> - CHROMISTA Family <i>Peronosporaceae</i> -FUNGI Phylum ASCOMYCOTA - FUNGI Phylum BASIDIOMYCOTA - IMPERFECT FUNGI - BACTERIAL DISEASES - VIRAL DISEASES - ABIOTIC STRESSES

4. TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i>	In-class lecturing	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <i>Use of ICT in teaching, Laboratory Education, Communication with students</i>	Use of ICT in teaching Communication with students.	
COURSE DESIGN <i>Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.</i> <i>The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</i>	Activity/ Method	Semester workload
	Lectures	39
	Laboratory practice	20
	Individual laboratory project (data processing and commenting)	
	Personal study	66
	Total of Course (25 hours of workload per ECTS)	125

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS <i>Detailed description of the evaluation procedures:</i> <i>Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other.....etc.</i>	Written Exam at the end of the semester
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Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.	
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5. SUGGESTED BIBLIOGRAPHY:

Phytopathology. E. Tjamos. Stamoulis Publications (in Greek)
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6. TEACHERS:

-Theory:

Epaminondas Paplomatas, Professor

Sotiris Tjamos, Associate Professor

Elisavet Chatzivasiliou, Associate Professor

Aliki Tzima, Assistant Professor

Ioannis Stringlis, Assistant Professor

-Laboratory:

Dimitris Tsitsigiannis, Professor

Elisavet Chatzivasiliou, Associate Professor

Aliki Tzima, Assistant Professor

Dr. Garyfallia Frogkogeorgi

Dr. Anastasia Venieraki