

## COURSE OUTLINE

### 1. GENERAL

<b>FACULTY</b>	AGRICULTURAL SCIENCES & FORESTRY		
<b>DEPT.</b>	AGRICULTURAL DEVELOPMENT		
<b>LEVEL OF STUDIES</b>	<i>Postgraduate</i>		
<b>COURSE CODE</b>	PAGR06	<b>SEMESTER</b>	2 <sup>nd</sup>
<b>COURSE TITLE</b>	Biotechnology of Plant Protection		
<b>INDIVIDUAL TEACHING ACTIVITIES</b>		<b>WEEKLY TEACHING HOURS</b>	<b>ECTS</b>
Lectures and Exercises		3	7.5
<b>COURSE TYPE:</b>	Basic Optional		
<b>PRECONDITION LESSONS:</b>	None		
<b>TUTORIAL LANGUAGE:</b>	Greek		
<b>LESSON OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>URL</b>	<a href="https://eclass.duth.gr/courses/OPE01214/">https://eclass.duth.gr/courses/OPE01214/</a>		

### 2. LEARNING RESULTS

<b>Learning Results</b>
<p>Following the successful completion of this course students will be able to:</p> <ul style="list-style-type: none"> <li>- understand host-microbe interactions at genetic and molecular levels,</li> <li>- explain characteristics related to resilience and quality,</li> <li>- design breeding strategies to develop varieties with improved resistance to stress and/or improved product quality,</li> <li>- use DNA analysis tools,</li> <li>- exploit genetic information from genetic data bases</li> </ul>
<b>General skills</b>
<ul style="list-style-type: none"> <li>▪ Promoting inductive thinking</li> <li>▪ Data mining, data analysis and synthesis</li> </ul>

### 3. COURSE CONTENT

<p>Lectures Scheduled during 2020-21:</p> <ol style="list-style-type: none"> <li>1. Introduction to plant biotechnology: Basic terms By E. Sinapidou, Assistant Prof., DUTH</li> <li>2. Biodiversity – Variation: Genetic mechanisms By E. Sinapidou, Assistant Prof., DUTH</li> <li>3. Biodiversity – Variation: Epigenetic mechanisms By E. Sinapidou, Assistant Prof., DUTH</li> <li>4. Conservation of varieties through variation management By I. Tokatlidis, Professor, DUTH</li> <li>5. Molecular plant microbe interactions: fungi and bacteria</li> </ol>
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- By E. Sinapidou, Assistant Prof., DUTH
6. Molecular plant microbe interactions: fungi and bacteria: viruses  
By E. Sinapidou, Assistant Prof., DUTH
  7. Pathways of systemic acquired resistance (SAR) and induced systemic resistance (ISR)  
By E. Sinapidou, Assistant Prof., DUTH
  8. interaction between plants and symbiotic microbes  
By M. Orfanoudakis, Associate Prof. DUTH
  9. Strategies and tools for the manipulation of genetic and genomic data  
By Maria Tokamani, Postdoc, DUTH
  10. Application of plant biotechnology  
By E. Sinapidou, Assistant Prof., DUTH
  11. Plant breeding for resistance to stress via genetic modification  
By E. Sinapidou, Assistant Prof., DUTH
  12. Genetic plant breeding for adaptation to stress  
By I. Tokatlidis, Professor, DUTH
  13. Biotechnology and bioethics  
By E. Sinapidou, Assistant Prof., DUTH

#### 4. INFORMATIVE AND LEARNING EVALUATION METHODS

<b>WAY OF TEACHING</b>	In classroom presentations and theoretical exercises	
<b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</b>	ICT use (power point)	
<b>TEACHING ORGANIZATION</b>	<b>Activity</b>	<b>Amount of activity in Semester</b>
	Lectures	39
	Exercises	100
	Individual research	48.5
	<b>Total (25 hours per credit unit)</b>	187.5
<b>STUDENT EVALUATION</b>	<ul style="list-style-type: none"> <li>• Final written exams: 60 %</li> <li>• Project: 20 %</li> <li>• Exercise: 20 %</li> </ul>	

#### 5. RECOMMENDED BIBLIOGRAPHY

1. Lewin B., «Genes VIII»
2. Watson James, Baker Tania, Bell Stephen, Gunn Alexander, Levine Michael, Richard Losick, «Μοριακή Βιολογία του Γονιδίου»
3. Watson James, κ.α., «Ανασυνδυασμένο DNA»

Additional material will be available to students during the course

## ANNEX OF THE COURSE OUTLINE

### Alternative ways of examining a course in emergency situations

<b>Teacher (full name):</b>	Ευαγγελία Σιναπίδου
<b>Contact details:</b>	<a href="mailto:esinnapid@agro.duth.gr">esinnapid@agro.duth.gr</a> , MS Teams, eclass
<b>Supervisors:</b>	YES
<b>Evaluation methods:</b>	Online exam
<b>Implementation Instructions::</b>	<p>Before the exam, a link to MS Teams which the students should follow on the day and time of the exam will be sent via e-class exclusively to the institutional accounts of the students who have registered for the course and declared to have accepted and understood the terms of distance learning and remote evaluation. MS Teams will be used for identification processes of the students via the demonstration of their academic identity. Students should also log in to the e-class page of the course using their institutional account. The exam will be available only to the registered users of the course who are eligible to participate in the exams. After logging in to e-class, students must select 'Exercises' from the options menu (left) and then the exercise entitled 'Exams'. The exam includes 30 questions and the duration of the exam is 20 minutes. The number of repetitions allowed is 2. However, the FIRST submitted exam will be the one to be considered. The written exam will form 40% of the final grade. Participants must remain logged in to MS Teams during the exam. Following the written exam, the participants should answer 2 oral questions. The grade of the oral exam forms 20% of the final grade. The procedure is governed by the rules described in the Code of Ethics and Good Practice of DUTH as well as the Policy for the Protection of Personal Data when using remote evaluation methods of DUTH.</p>