

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	AGRICULTURAL AND FORESTRY SCIENCES		
<b>DEPARTMENT</b>	AGRICULTURAL DEVELOPMENT		
<b>LEVEL OF STUDIES</b>	7		
<b>COURSE CODE</b>	AGR0N1009	<b>SEMESTER</b>	6 <sup>th</sup> & 8 <sup>th</sup>
<b>COURSE TITLE</b>	PESTS OF STORED PRODUCTS & OF MEDICAL IMPORTANCE		
<b>TEACHING ACTIVITIES</b>		<b>TEACHING HOURS PER WEEK</b>	<b>ECTS CREDITS</b>
	Lectures and Labs	5 (3+2)	5
<b>COURSE TYPE</b>	Scientific Area		
<b>PREREQUISITES:</b>	No		
<b>TEACHING &amp; EXAMINATION LANGUAGE:</b>	Greek English (Erasmus students)		
<b>COURSE OFFERED TO ERASMUS STUDENTS:</b>	Yes		
<b>COURSE URL:</b>	<a href="https://eclass.duth.gr/courses/OPE01153/">https://eclass.duth.gr/courses/OPE01153/</a>		

### 2. LEARNING OUTCOMES

<b>Learning Outcomes</b>
After the completion of the course the students: <ul style="list-style-type: none"> <li>(a) Will have acquired the ability to identify the most important pests of stored products and pests of health importance;</li> <li>(b) Will understand the key elements of the biology, ecology and behavior of pests infesting agricultural products after harvest;</li> <li>(c) Will understand the main elements of the biology, ecology and behavior of insects and mites of health importance (mosquitoes, flies, bedbugs, gnats, lice, fleas, ticks);</li> <li>(d) Will be able to use the currently available methods of combating the above enemies.</li> </ul>
<b>General Skills</b>
Autonomous work Literature search, data analysis and synthesis Critical thinking

### 3. COURSE CONTENT

<ol style="list-style-type: none"> <li>1. The ecosystem of stored products. Economic and health importance of pests of stored products. Preventive measures</li> <li>2. Preventive measures to combat pests of stored products</li> <li>3. Sampling methods for the detection of the presence of pests in storage and processing areas</li> <li>4. Disinfestations: methodology, modern technological approaches, relevant legislation. The use of insecticides, other available preparations &amp; prospects for the use of essential oils</li> <li>5. Alternative chemical methods of treating stored products pests (biological control, controlled atmospheres, high - low temperatures and ionizing radiation)</li> <li>6. Pests of stored products. Biology, behavior and economic importance of Coleoptera pests of the families Curculionidae, Tenebrionidae, Bruchidae, Anobidae, Sylvanidae</li> <li>7. Pests of stored products. Biology, behavior and economic importance of Coleoptera pests of the families Dermestidae, Nitidulidae, Ptinidae, Cucujidae, Trogostidae</li> <li>8. Pests of stored products. Biology, behavior and economic importance of Lepidoptera pests of the families Pyralidae, Gelechiidae, and Psocoptera pests (Liposcelidae)</li> </ol>
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9. Pests of stored products. Biology, behavior and economic importance of Coleoptera pests of the order Dictyoptera (cockroaches). Mite pests of stored products (Family Acaridae)
10. Rodents as stored products pests: important species, health and economic importance, biology and behavior, control methods. Birds in the urban environment as potential pests and control
11. Pests of health importance. Biology, behavior, economic importance and control of pests of the order Diptera (Family Muscidae, Tabanidae)
12. Pests of health importance. Biology, behavior, economic importance and control of pests of the order Diptera (Family Culicidae)
13. Pests of health importance. Biology, behavior, economic importance and control of pests of the orders Heteroptera (Family Cimicidae), Phthiraptera (Family Pediculidae), Siphonaptera.

#### 4. LEARNING & TEACHING METHODS - EVALUATION

<b>TEACHING METHOD</b>	Face to face	
<b>USE OF INFORMATION &amp; COMMUNICATIONS TECHNOLOGY (ICT)</b>	Use of ICT in Teaching and in Communication with students	
<b>TEACHING ORGANIZATION</b>	<i>Activity</i>	<i>Workload/semester</i>
	Lectures	39
	Laboratory exercises	26
	Literature research & analysis	15
	Independent learning	45
		<b>125</b>
<b>STUDENT EVALUATION</b>	Concluding Written Assignment (10%) Multiple Choice Test & Short Answer Questions (90%)	

#### 5. SUGGESTED BIBLIOGRAPHY

1. ELDRIDGE B.F., EDMAN J.D. (2004). MEDICAL ENTOMOLOGY: A TEXTBOOK ON PUBLIC HEALTH AND VETERINARY PROBLEMS CAUSED BY ARTHROPODS. KLUWER ACADEMIC PUBL. NETHERLANDS.
2. HAGSTRUM D.W., SUBRAMANYAM B. (2006). FUNDAMENTALS OF STORED-PRODUCT ENTOMOLOGY. AACC INTERNATIONAL. USA.
3. ROBINSON W.H. (2005). HANDBOOK OF URBAN INSECTS AND ARACHNIDS. CAMBRIDGE UNIVERSITY PRESS. CAMBRIDGE.
4. SUBRAMANYAM B. (1996). INTEGRATED MANAGEMENT OF INSECTS IN STORED PRODUCTS. MARCEL DEKKER. U.S.A.

## ANNEX OF THE COURSE OUTLINE

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

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<b>Supervisors:</b>	NO
<b>Evaluation methods:</b>	Written examination
<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 multiple choice questions, one of which is correct, while there is a negative score for wrong answers (not for the blank ones) equal to 1/2 of the correct answer. The total number of questions is 20 and the duration of the exam is 60 minutes. Each correct answer is scored with 0.5. From the beginning of the exam by the students, there will be a time limit of 20 minutes (at the top right of the screen, the students will be able to see the time left to complete the exam) per repetition. There is no limit in the number of repetitions allowed. However, the FIRST submitted exam will be the one to be considered. Participants must remain logged in to MS Teams during the exam. 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>