

COURSE MODULE OUTLINE

(1) General information

SCHOOL	School of Science and Technology		
PROGRAM COURSE	Interdisciplinary PSP cultivations under cover- Hydroponics (KYK)		
LEVEL OF STUDY	Postgraduate program-Master of Science (MSc)		
COURSE UNIT CODE	KYK51		Second semester
COURSE TITLE	Plant Protection of vegetable crops under cover		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
<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 workload hours: 21-22 hours x 13 weeks		280	10 ECTS
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>			
COURSE TYPE Compulsory, Optional, Optional mandatory	Compulsory		
PREREQUISITE COURSES:	no		
LANGUAGE OF INSTRUCTION AND EXAMS:	The language of instruction of the programme is Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	no		
COURSE WEBSITE (URL)	https://www.eap.gr/en/crops-under-cover-hydroponics/topics/#k51 Each module has its own space in the Learning Management System of EAP (https://courses.eap.gr/login/index.php), with controlled access (use of code) for students and teaching staff.		

(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*

Upon successful completion of this unit, students will be able to:

- The acquisition of the basic knowledge about the attacks caused to cultivated plants by pests (insects, mites, nematodes).
- To still recognize the symptoms caused to plants by pests. To know basic elements of their classification, their biology and their ecology
- Understand the economic dimension of dealing with pests. Theoretical approach to coping. Methods of estimating population density. Biological control. Natural Control Methods, Biotechnological methods (Use of resistant varieties, growth and behavior of insects, exfoliation of sterilized insects). Chemical control in the context of integrated treatment. Planning of Integrated Crop Managing Strategies (case studies). Interaction of the animal enemy with the environment and with other microorganisms.
- Understand the risks from the reckless use of plant protection products and the methods and rules for the safety of use for the user, the consumer of agricultural products and the environment. Training in the principles of plant protection of agricultural crops and the means and methods used in the integrated treatment of plant pests, in order to ensure plant health of crops, with the least possible disruption to the ecosystem
- Describe symptomatology, etiology, biology and epidemiology of the most important fungal, bacterial, viral and non-infectious diseases of vegetable crops.
- Know the principles of integrated disease management of vegetable crops (cultural measures, chemical, biological and integrated control)
- Develop skills to observe symptoms, identify signs (through stereoscopic and microscopic observations), spores and fruiting bodies, being able to do a correct diagnosis and control the diseases
- Be able to constantly be informed on important issues that concern diseases of vegetable crops

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 (Other.....citizenship, spiritual freedom, social

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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awareness, altruism etc.)

Acquire of the background knowledge in order to deal with applied subjects.
Decision-making.
Individual/Independent work.
Working in an interdisciplinary environment
Introduction of innovative research
Environmental awareness

(3) COURSE CONTENT

The content of this course targets on the knowledge of the pests and diseases of vegetable crops cultivated under cover and their impact on the plant growth, survival and production. Acquiring this background will permit pest and diseases diagnosis based on symptoms but mostly will allow development of control strategies in an integrated manner. The course includes the following units:

- Introduction to plant pests
- Holometabolous Insects: Lepidoptera-Diptera-Coleoptera
- Heterometabolous Insects: Paurometabola - Hemimetabola -Neometabola
- Mites-Nematodes-Rodents of plant crops
- Integrated Control of the important plants pests: Understanding the economic dimension of dealing with Animal enemies and more generally its theoretical basis. Main treatment methods, their advantages and disadvantages. Planning Integrated Treatment Programs. Dealing with specific groups of insects. Modern methods of dealing with enemies of cover crops

Introduction to plant diseases

Diseases of vegetable crops caused by plant pathogenic fungi, bacteria, viruses and non-infectious agents.

Diseases of tomato, eggplant, pepper and okra (I)

- Fungal diseases: Infections of above ground parts. Infections of root, crown and fruits. Vascular wilts.

Diseases of tomato, eggplant, pepper and okra (II)

- Bacterial, viral and non-infectious diseases: Infections of above ground parts. Infections of root, crown and fruits. Vascular wilts.

Diseases of crucifers

- Fungal, bacteria, viral and non-infectious diseases of cabbage, cauliflower, broccoli.

Diseases of cucurbits

- Fungal, bacteria, viral and non-infectious diseases of cucumber, zucchini, watermelon, melon.

Diseases of bulbous and leafy vegetables

- Fungal, bacteria, viral and non-infectious diseases of onion, garlic, leak, lettuce, celery, spinach, artichoke.

(4) TEACHING METHODS--ASSESSMENT

<p>MODES OF DELIVERY <i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i></p>	<ul style="list-style-type: none"> - distance learning using the HOU's E-Learning Platform and conducting Group Consultative Meetings (tele-GCM). 	
<p>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <i>Use of ICT in teaching, Laboratory Education, Communication with students</i></p>	<ul style="list-style-type: none"> - Use of ICT in teaching, Communication with students More specifically, we use : - Remote meetings tools (webex), - Presentation software (e.g. power point), - Specialized software in the subjects under study. - Additionally, the students use office automation tools, web browsers and e-reader for digital books. 	
<p>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></p> <p><i>The study hours for each learning activity as well as the hours of selfdirected study are given following the principles of the ECTS.</i></p>	<p>Activity/Method</p>	<p>Semester workload</p>
	<p>3 meetings (4hrs)</p>	<p>12 hrs</p>
	<p>2 educational activities</p>	<p>30 hrs</p>
	<p>1 written assignment (semester essay)</p>	<p>60 hrs</p>
	<p>Final examinations</p>	<p>3 hrs</p>
	<p>Individual study</p>	<p>168-181 hrs</p>
	<p>Total course work load</p>	<p>273-286 hrs</p>
<p>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS <i>Detailed description of the evaluation procedures:</i></p> <p><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></p> <p><i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i></p>	<ul style="list-style-type: none"> - a1. Two (2) Short Written Essays, with weighting factor to the class unit's final grade 10% each. - a2. One (1) Semester Essay with weighting factor to the class unit's final grade 20%. - a3 The right to participate in the final exams is secured if there is at least 50% of the sum of what is potentially excellent from all the essays collected and graded, that is 20 units overall out of 100, according to the weighting factors referred to in points a1 and a2. - a4. The grade of the written assignments (short and semester) is activated only with a grade equal to, or above the base (≥ 5) in the final or repeated exams. - All criteria are posted in each module's webpage, as well as in the programme's general page. - The final examination includes a multiple choice sheet, as well as oral examination and accounts for 60% of the total grade. <p>There are all the criteria posted, both in each written assignment (in the study) and in the general regulation: https://www.eap.gr/wp-content/uploads/2022/03/kanonismos-spoudwn-isxys-apo-to-didaktiko-etos-2022-2023.pdf</p>	

(5) SUGGESTED BIBLIOGRAPHY:

-Suggested bibliography

- Tsapikounis, F. (1996). Biological and Integrated Control in the Greenhouse. Athens: Stamoulis Publications, (in Greek) ISBN: 978-960-351-089-0, p. 312
- Panagopoulos, C. (2000). Diseases of vegetable crops, Athens: Stamoulis Publications, second edition, (in greek) ISBN: 978-960-351-028-9

Optional:

-Related scientific Journals