

APICULTURE

COURSE OUTLINE

ΓΕΝΙΚΑ

SCHOOL	AGRICULTURE SCIENCE		
DEPARTMENT	FOOD SCIENCE AND NUTRITION		
STUDY LEVEL	5 years		
COURSE CODE	CP617	SEMESTER OF STUDY	6th
COURSE TITLE	APICULTURE		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY COURSES	CREDITS
<i>In case ECTS are awarded for distinct parts of the course e.g. Theory Lectures, Laboratory Practicals etc. If ECTS are awarded uniformly for the entire course, give the weekly teaching hours and total ECTS.</i>			
Theory Lectures		3	
Exercises		2	
TOTAL			5
COURSE TYPE <i>Background, Basic knowledge, Field of Science, Skill development</i>	General background and knowledge regarding Apiculture such as the structure and function of the beehive, the anatomy and morphology of the bee and the behavior and biological cycle of this insect		
PREREQUISITES:	No		
LANGUAGE:	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	No		
COURSE WEB PAGE (URL)	https://food.uth.gr/apiculture		

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*

After the successful completion of the course Apiculture, the student, at a level of knowledge, will be able to understand the structure and function of the beehive, list the bee breeds, recognize and describe elements of anatomy and morphology of the bee, describe and interpret the behavior and biological cycle of this insect. In addition, they will be able to describe the bee society and understand the structure of its nest, as well as describe the methods of genetic improvement that can be applied. It will also be able to recognize and describe the general principles of bee breeding, to recognize the important apiculture plants and the necessary apiculture equipment. Finally, he will be able to recognize bee products, distinguish their importance, be able to describe basic properties they have and choose them in his daily life.

In terms of competence, the student will be able to design and implement the necessary and basic apiculture manipulations, as well as the queen production program. It will also be able to apply techniques for the production of other apiculture products such as pollen, royal jelly, poison and propolis. It will be able to organize therapeutic approaches, check for the main diseases of the bee and implement preventive measures to reduce bee diseases.

At the level of attitudes, the student will be able to defend the importance of apiculture for the environment and livestock farming, to appreciate the pollinating contribution of the bee and to encourage the preservation and protection of this insect. It will also be able to encourage the utilization of important apiculture plants and finally, it protects the bee from reckless spraying and supports its protection by appreciating its significant contribution.

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?

- Theoretical thinking and the ability to translate theory into practice
- Search, analyze and synthesize data and information, using the necessary technologies
- Decision-making
- Autonomous Work
- Teamwork
- Working in an interdisciplinary environment
- Generation of new research ideas
- Criticism and self-criticism
- Promoting free, creative and inductive thinking
- Respect for the natural environment

COURSE CONTENT

THEORY

- Apiculture at national and global level
- Systematic classification and breeds of bees. The development and society of bees (queen, worker, drone).
- Morphology, anatomy and physiology of the bee. Biological cycle of bees
- Diet, activities and behaviour of bees
- Nesting, swarming, genetics and bee improvement.
- Basic knowledge of apiary management
- Mechanism of honey production and pollen collection. Apiculture plants
- Growth of beehives during the year, basic apiculture manipulations (spring, summer, autumn, winter)
- Apiculture equipment
- Introductory facts about bee pests, diseases and poisonings. Beehive defense mechanisms
- Physicochemical characteristics of honey. Honey adulteration
- Hive products (pollen, propolis, royal jelly, poison, wax)

LABORATORY

- Applications in Apiculture
- Clinical examination and sampling for laboratory diagnosis of bee diseases
- Demonstration of basic apiculture manipulations in the apiary
- Teaching Visits

TEACHING METHODS--ASSESSMENT

METHOD OF DELIVERY

Face to face, Distance learning, etc.

Face-to-face lectures in the auditorium and outdoors

<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</p> <p><i>Use of ICT in teaching, Laboratory Education, Communication with students</i></p>	<ul style="list-style-type: none"> • Use of ICT in Teaching • Use of ICT in Laboratory Training (Use of food quality control software) • Use of ICT in Communication with Students • The course material (theory and exercises) is posted on the e-class of the Department. Communication with students is done through announcements in e-class. From this platform students can communicate by email with the instructor 											
<p style="text-align: center;">TEACHING ORGANIZATION</p> <p><i>The method and methods of teaching are described in detail.</i></p> <p><i>Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliography Study & Analysis,</i></p>	<table border="1"> <thead> <tr> <th style="text-align: center;"><i>Activity</i></th> <th style="text-align: center;"><i>Semester Workload</i></th> </tr> </thead> <tbody> <tr> <td><i>Lectures in Auditorium</i></td> <td style="text-align: center;"><i>39</i></td> </tr> <tr> <td><i>Laboratory field exercise / Laboratory exercises</i></td> <td style="text-align: center;"><i>39</i></td> </tr> <tr> <td><i>Show</i></td> <td style="text-align: center;"><i>10</i></td> </tr> </tbody> </table>	<i>Activity</i>	<i>Semester Workload</i>	<i>Lectures in Auditorium</i>	<i>39</i>	<i>Laboratory field exercise / Laboratory exercises</i>	<i>39</i>	<i>Show</i>	<i>10</i>			
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<p><i>Tutorial, Internship (Placement), Clinical Practicing, Art Workshop, Interactive Teaching, Educational visits, Project Writing, Writing a project / assignments, Artistic creation, etc.</i></p> <p><i>The student's study hours for each learning activity are listed as well as the hours of unguided study so that the total workload at semester level corresponds to ECTS standards</i></p>	<table border="1"> <tbody> <tr> <td><i>Interview with an expert</i></td> <td style="text-align: center;"><i>2</i></td> </tr> <tr> <td><i>Study visits</i></td> <td style="text-align: center;"><i>6</i></td> </tr> <tr> <td><i>Unguided study</i></td> <td style="text-align: center;"><i>29</i></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td><i>Total Course (25 hours of workload per credit)</i></td> <td style="text-align: center;"><i>125</i></td> </tr> </tbody> </table>	<i>Interview with an expert</i>	<i>2</i>	<i>Study visits</i>	<i>6</i>	<i>Unguided study</i>	<i>29</i>			<i>Total Course (25 hours of workload per credit)</i>	<i>125</i>	
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<p style="text-align: center;">STUDENT EVALUATION</p> <p><i>Description of the evaluation process</i></p> <p><i>Assessment Language, Assessment Methods, Formative or Summative, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay/Report, Oral Examination, Public Presentation, Laboratory Work, Clinical Examination of a Patient, Artistic Interpretation, Other/Others</i></p> <p><i>Explicitly defined evaluation criteria and whether and where they are accessible to students are mentioned.</i></p>	<ol style="list-style-type: none"> 1. Written examination (70%): <ul style="list-style-type: none"> - Language of assessment: Greek - Evaluation method: - Multiple-choice test (Formative, Summative) - Short answer questions - Problem Solving (Formative, Summative) 2. Lab grade (30%): <ul style="list-style-type: none"> - Written Assignment (Formative, Summative) - Public Presentation (Formative, Summative) 											
<p style="text-align: center;">RECOMMENDED-BIBLIOGRAPHY</p> <p>--Suggested Bibliography: P. Charizanis, Melissa and Apiculture Technique, 2017. Pappa Publications NIK. IRINI - APICULTURE INSPECTION A. Thrasyvoulou, Practical Apiculture, Problems, Causes & Solutions, 2015. Pappa N. Irini Publications</p> <p>-Related scientific journals: Journal of Apicultural Research Apidology Journal of Apicultural Science Beekeeping Inspection</p>												