

General information		
Academic subject	Beekeeping sector Hygiene and Safety Control	
Degree course	Veterinary Medicine	
Academic Year	2021/2022	
European Credit Transfer and Accumulation System (ECTS)	2	
Language	Italian	
Academic calendar (starting and ending date)	I Bimester	
Attendance	Mandatory	

Professor/ Lecturer	
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Department and address	Veterinary Medicine Campus – Valenzano (BA)
Virtual headquarters	Department of Veterinary Medicine Sector “ Food Safety”
Tutoring (time and day)	Tuesday: 13.00-14.00 hours Thursday: 13.00-14.00 hours (upon request by email)

Syllabus	
Learning Objectives	To provide the theoretical-practical basis necessary for the sanitary control of the apiary, in order to contrast the adversities that threaten the bee heritage; to know the beehive pathologies; to know the legal and illegal use of drugs and phytopharmaceuticals in the apiary, to know the nutritional and health quality of the beehive products (honey, propolis, royal jelly, poison); to learn the honey control techniques foreseen by the regulations; to apply the self-control and the HACCP system to the beekeeping chain.
Course prerequisites	The student must be familiar with EC Reg. 852/04 on production hygiene and have acquired the principles of the HACCP system; he/she must have acquired knowledge of food microbiology and environmental toxicology.
Contents	<p>Area: Food Safety and Quality and professional Training</p> <ul style="list-style-type: none"> - Systematics of the superfamily Apoidea. Species and subspecies of the genus Apis. - Organisation of bee society. Notes on the morphology, anatomy and physiology of the bee. - Hive as a super-organism: functions of worker bees, drones and queens. - Mechanisms of bee colony development; - Beekeeping equipment and production hygiene - Honey production methods and quality; - Chemical, biological and physical hazards in honey production - Labelling of hive products - Hive diseases; - Role in the ecosystem played by bees and pollinating insects - Health and commercial frauds in the beekeeping sector - European and national regulations
Books and bibliography	- A. Contessi - Le api. Biologia, allevamento, prodotti. - Edagricole, BO, Ed 2017

	<ul style="list-style-type: none"> - G. Lombardi – Malattie delle api - Edagricole BO - G.L. Marazzan, L. Bortolotti – I prodotti dell'aveare - Edagricole (2017)
Additional materials	Lesson Notes and slides projected in class.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
50	13	25	12
ECTS			
2	13	25	
Teaching strategy			
<p>The theoretical part of the course takes place in a classroom equipped with a PC, projector and internet connection. Slides will be projected. During the course, guidance is given on the use of thematic portals and websites.</p> <p>The exercises are carried out at the Department's experimental apiary and at the honey extraction laboratory. Educational visits to local beekeeping farms are also planned.</p>			
Expected learning outcomes			
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ know the mechanisms of bee colony development; ○ know how honey is produced and its quality ○ recognise hive pathologies ○ know the role of bees in the ecosystem ○ know the regulations of the sector 		
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ evaluate apiary health management ○ know the aetiology and pathogenesis of hive diseases ○ control the hygienic-sanitary management of the beekeeping farm in compliance with the sector's regulations ○ monitor the production of beekeeping products in compliance with the sector's legislation 		
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Organise the audit system for controlling the beekeeping chain ○ To know the official methods for the control of beehive products. ○ Evaluate commercial and sanitary frauds for hive products • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ carrying out group exercise activities to combine theory and practice and learning to communicate in appropriate language ○ Interacting and communicating with beekeepers and laboratory technicians ○ Organising presentations in power point or other media communication systems using language properties • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ To develop a desire for competence, beyond the didactics provided, as a motivational factor for success in the profession. ○ To deepen the learning topics indicated ○ To develop the manual skills necessary for surveillance and inspection in the apiary. 		

Assessment and feedback	
Methods of assessment	The knowledge acquired is tested by means of a practical test in an apiary, together with an inspection assessment of the health status, and an oral test on contents of the programme course.
Evaluation criteria	<ul style="list-style-type: none"> • Knowledge and understanding <ul style="list-style-type: none"> ○ The student must be able to recognise pollinating insects, with particular reference to the different European bee species. ○ The student must know the nutritional and nutraceutical qualities of hive products ○ The student should know how to inspect in case of hive pathologies ○ The student should know the regulations on the use of plant protection products in the apiary. • Applying knowledge and understanding <ul style="list-style-type: none"> ○ The student must know how to carry out the health check of the superorganism ○ The student must know the stages of honey extraction and good hygienic practices ○ The student must know how to sample bees, honey in combs, wax, etc. • Autonomy of judgment <ul style="list-style-type: none"> ○ The student must be able to orientate himself/herself in the application of the sectoral regulations. • Communicating knowledge and understanding <ul style="list-style-type: none"> ○ The student must demonstrate language skills ○ The student must demonstrate legislative orientation • Communication skills • Capacities to continue learning <ul style="list-style-type: none"> ○ The student demonstrates an ability to learn and an interest in the discipline with in-depth scientific studies of topics not specifically included in the teaching programme.
Criteria for assessment and attribution of the final mark	<p>The examination is considered passed when the mark is greater than or equal to 18. The final assessment will be based on:</p> <p><u>Objective tests</u>: well-tailored to the objectives to be checked and make the judgement absolutely independent of the subjectivity of the teacher. independent of the subjectivity of the teacher. The objectivity consists in the possibility of predetermining the "accuracy" of the answers.</p> <p><u>Non-objective tests</u>: they provide open-ended stimuli and answers and allow the evaluation of complex mental processes, such as the ability to communicate one's own thoughts, the ability to construct a logical discourse and to grasp the essential elements of an argument, the critical sense and the ability to find original solutions.</p>
Additional information	