

ACADEMIC YEAR 2023/2024

General information	
Name of the integrated course	BIOSECURITY IN LABORATORIES AND IN THE RELATIONSHIP WITH ANIMALS
Integrated teaching modules	Biosicurity; Animal Handling I; Animal Handling II.
Degree course	<i>Veterinary Medicine (LM42)</i>
Academic Year	I
European Credit Transfer and Accumulation System (ECTS):	3
SSD	
Language	Italian
Period of teaching	III-IV bimester
Attendance	Mandatory

Professors/ Lecturers	e-mail address	Phone
Michele Camero	michele.camero@uniba.it	0804679841
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Carmela Valastro	carmela.valastro@uniba.it	0804679816

Headquarters	Campus of Veterinary Medicine, S.P. per Casamassima km 3, 70010 Valenzano
Virtual headquarters	Microsoft Teams code:2aafs26
Headquarters Tutoring (time and day)	Tuesday and Thursday 1.30 – 4.30 pm (by email appointment) Alternative availability by appointment via email

Syllabus	
Learning Objectives	<p>The integrated Biosafety in Laboratories and Animal Relationships course aims to provide students with knowledge and skills related to risk assessment related to workplaces, handling of biological materials or exposure to physical and chemical agents, and knowledge of environments potentially hazardous to their health. Through a proper approach to facilities (laboratories, clinics and stables) and the safe use of machinery, protective equipment or potentially dangerous substances, they will be able to carry out activities in safe conditions, particularly in the approach to animals and related diseases.</p> <p>Under Animal Handling I and II, the necessary tools will be provided for students to acquire the knowledge and skills for the proper approach to farm animals and companion, wild and unconventional animals so as to ensure the safety of the veterinarian in handling these species of animals and, likewise, of the owner and the animals themselves during the clinical examination.</p> <p>Behavioral rules in rooms where healthy and sick animals circulate (examination rooms, shelters, surgical rooms, radiology rooms) for the safety of operators will be explained; the rules of behavior in stables and housing places for farm animals will be also explained.</p>

Course prerequisites	There are no propaedeutics. The student must have the basic concepts of Biology, General and Inorganic Chemistry and Physics and Anatomy I
<p>Contents of the teaching module:</p> <p>BIOSECURITY</p> <p>Teacher:</p> <p>Michele CAMERO</p> <p>ECTS: 1</p> <p>Hours: 15</p> <p>Lectures: 7</p> <p>Practical activities:8</p>	<p>Regulatory compliance with the law on workplace safety and biosafety (DL 626/94, DL 81/08 and subsequent updates. Health and safety regulations of Uniba (DR 1144 of 18/04/2018). Collective protective devices (CPD). Personal protective equipment (PPE). Health and safety signage. Definition of risk and hazard (Risk assessment and hazard analysis). Chemical risk: toxicity of substances, short- and long-term effects. Biological risk: pathogens and classification for human risk of zoonotic agents. Risk from genetically modified microorganisms (GMMOs). Categories of individuals at risk. Organization of laboratories for the purpose of handling zoonotic agents. Animal pathogenic but not human pathogenic and diffusible agents that require strict biosafety standards in handling. Physical risk in veterinary laboratories and university facilities. Radio-protection. Risk associated with contact with animals and proper approach to the sick and/or hospitalized animal. Biosecurity in isolation unit. Enclosures. Waste disposal management. Chemical and biological spill-over. Concept of sustainability in reagent use and disposal: green chemistry.</p> <p>Use of equipment substance safety data sheets. Personal protective equipment. PPE the gloves for chemical and biological hazards. Pictograms. En 374, 388, en 407, en 511. Oms; guidelines; handwashing; soaps; sanitizing gels; surgical masks (en 14683).</p>
<p>Contents of the teaching module:</p> <p>ANIMAL HANDLING I</p> <p>Teacher:</p>	<p>General aspects related to risks associated with activities involving livestock. Safe approach to zootecnic species of interest for basic diagnostic procedures, clinical evaluation, sample collection, and administration of medications.</p> <ul style="list-style-type: none"> • Correct approach and containment methods for equines • Correct approach and containment methods for cattle

<p>Davide MONACO</p> <p>ECTS: 1 Hours: 15 Practical activities:15</p>	<ul style="list-style-type: none"> • Correct approach and containment methods for small ruminants • Correct approach and containment methods for pigs • Biosecurity in livestock barns.
<p>Contents of the teaching module:</p> <p>ANIMAL HANDLING II</p> <p>Teacher: Carmela VALASTRO</p> <p>ECTS: 1 Hours: 15 Practical activities:15</p>	<ul style="list-style-type: none"> • Proper approach and methods of restraint of the dog. • Correct approach and methods of containment of the cat, • Correct approach and methods of containment of wild avifauna, wild and unconventional animals. • Proper management of animals in conducting clinical examination and performing major diagnostic investigations. • Biosecurity in outpatient clinics and various facilities of veterinary hospitals (examination rooms, operating rooms, hospitalizations)

<p>Biosafety rules for the attendance of practical activities.</p>	<p>Access to the laboratories, outpatient clinics, surgical rooms, 'Isolation Unit, Veterinary Hospital stables, and Sea Turtle Clinic is allowed only to students who are equipped with the required clothing and devices in the various rooms and who have reviewed the biosafety manuals.</p> <p>Students will only be allowed to participate in hands-on field activities if equipped with appropriate protective clothing</p>
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<p>Materiale per lo studio personale</p>	
<p>Testi di riferimento</p>	<p>Health and safety regulations of Uniba (DR 1144 of 18/04/2018).</p> <p>Handbook for laboratory safety in the Department of Veterinary Medicine, edited by Dr. Costantina Desario. Laboratory Biosafety Manual, 3rd edition (www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf).</p> <p>Chemical risk in laboratories Inail Handbook. Inail Editions 2015 (https://www.inail.it/cs/internet/docs/rischio_chimico_manuale_laboratori.pdf)</p> <p>SOP of biosafety applied to the Faculty of Veterinary Medicine, University of Liege. 2010 (http://www2.fmv.ulg.ac.be/actualites/Biosecurity_Manual_Final_6Jan10.pdf)</p> <p>Websites: Center for Disease Control (CDC, www.Cdc.gov), World Health Organization (www.who.int), International Office of Epizootics (www.oie.int).</p> <p>International Working Group on Veterinary Biosecurity (http://ivbw.camp9.org).</p> <p>Veterinary Hospital Biosecurity Manual.</p>

	<p>Sea Turtle Clinic Biosecurity Manual. Chapman S.J. Safe handling and restraint of animals, a comprehensive guide. John Wiley & Sons Ltd 2018. Rockett J, Boosted S. Veterinary clinical procedures in large animal practice. 2nd edition. Cengage Learning 2016. Ballard B, Rockett J. Restraint and Handling for veterinary technicians and assistants, Cengage Learning Delmar 2009.</p>
Additional materials	<p>Additional lecture materials are provided by the lecturers at the beginning of the course and are available on the TEAMS platform . Supplementing the indicated/provided lecture material with notes taken during the lesson is recommended. The lecturer will indicate from time to time the most appropriate bibliographic references in relation to the topics covered or provide additional material</p>

Work schedule			
Hours			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Individual study
75	7	38 (repeated exercises to be organized according to the number of students who will constitute the cohort)	30
ETCS			
3	0,5	2,5	

Teaching strategy	<p>Teaching will be delivered through lectures; problem solving and role-playing, will be added in order to integrate information and foster learning. The entire teaching process will be implemented through iconic, verbal and graphic communication models, making use of available teaching resources and technologies. Practical classes will be conducted in the laboratories of the Infectious Diseases Section and Isolation Unit of the Veterinary Hospital and, if necessary, on the farm. Students will be divided into groups, supervised and guided by the lecturer and staff members. In Animal Handling I and II, the lecturer will explain how to approach animals correctly and the basic manipulation techniques to perform a clinical examination. Students will apply the techniques under the supervision of the teacher, to acquire the right manual skills to safely perform the main diagnostic procedures in different animal species.</p>

Expected learning outcomes	
Knowledge and understanding ability	<p>At the end of the course, the student will acquire knowledge and skills to:</p> <ul style="list-style-type: none"> - recognize and assess chemical hazards; - recognize and evaluate the risks from exposure to physical and biological agents; - recognize dangerous situations in the workplace, with reference to structures where biological materials are handled or where there is contact with animals. <p>In the Animal Handling modules, in line with the "First Day Competencies" adopted by the ECCVT, the student should know:</p> <ul style="list-style-type: none"> o The Risks associated with activities with companion, wild and unconventional and farm

	<p>animals (DOC 1.3, DOC 2.9)</p> <ul style="list-style-type: none"> o The Techniques and tools for containment of different species in relation to operator safety and animal welfare. (DOC 1.3, DOC 1.16) o The Techniques of containment in different clinical circumstances (examination, instrumental and non-instrumental diagnostic investigations (DOC 1.16) o The Biosecurity Standards in places where animals circulate (clothing, handwashing, norms of behavior and management of animal kits) and proper waste management (DOC 1.28)
Applied knowledge and understanding ability	<p>At the end of the course, the student must be able to:</p> <ul style="list-style-type: none"> - autonomously interpret the safety signs, the safety data sheets of the chemical reagents and recognize the biological and physical risks. - apply knowledge in the correct use of individual and collective protective equipment. - demonstrate the knowledge of the methods for the correct approach to the different species considered (dog, cat, wild and non-wild birds of prey, sea turtles, unconventional mammals, farm animals). <p>- Properly approaching animals and infectious diseases transmitted by them.</p> <p>- demonstrate knowledge of medical and non-medical waste disposal.</p>
Soft skills	<p>Autonomy of judgment</p> <ul style="list-style-type: none"> - Ability to analyze critical issues in a laboratory operational process (sterilization, disinfection etc); 1.28 - Ability to apply knowledge to work safely. 1.3 1.28 - Ability to interact with colleagues in compliance with common rules during work phases; 2.11 - Acquire the appropriate preparation for possible emergencies in laboratory activities; 1.11 - Ability to propose solutions in problem situations 1.11 - Ability to assess the correct approach and the most appropriate restraint in relation to the emotional state of the patient (calmness, aggressiveness etc) and to the possible presence of the owner 1.1 1.16 <p>Communication skills</p> <p>Ability to work in a team, adopting appropriate communication and interaction strategies 1.6</p> <ul style="list-style-type: none"> - Know how to explain to the owner the need for patient restraint to ensure the safety (of the patient, the veterinarian, and the owner himself) and instruct him/her if his support is needed. 1.4
Summary of the knowledge competences that the integrated course concurs to let the students acquire (Day One Competences) as scheduled by EAEVE	<p>Knowledge and Competences:</p> <p>1.1 1.3 1.4 1.6 1.16 1.28 2.9</p>
Assessment and feedback	

Methods of assessment	<i>Verification of achievements will be conducted through the final examination, which will ascertain knowledge and understanding of the topics covered and acquisition of the skills described with any species of animal through theoretical questions and practical demonstrations of the procedures. The possibility of carrying out ongoing evaluation is scheduled.</i>
Evaluation criteria	<ul style="list-style-type: none"> • Knowledge and understanding ability: <ul style="list-style-type: none"> o Ability to express acquired knowledge in an organic and thorough manner. o Demonstrated knowledge of biosecurity regulations in places frequented by animals of various species • Applied knowledge and understanding ability: <ul style="list-style-type: none"> o Demonstration of pet, wild and unconventional species containment techniques in relation to clinical needs. o The student will be expected to properly approach animals of livestock interest and demonstrate mastery of the various techniques of conduction and physical restraint by description and execution of the maneuvers • Autonomy of judgment: <ul style="list-style-type: none"> o Ability to analyze, synthesize and manage risk. • Communication skills: <ul style="list-style-type: none"> o Expository skills and clarity.
Criteria for assessment and attribution of the final mark	Final proficiency in the Biosafety in Laboratories and Animal Relationships exam will be acquired by ascertaining and/or demonstrating hands-on learning of Biosafety, Animal Handling I and Animal Handling II
Altro	