

General information	
Academic subject	<b>BIOSECURITY</b> of the integrated BIOSECURITY exam IN LABORATORIES AND RELATIONSHIP WITH ANIMALS
Degree course	Veterinary Medicine
Academic Year	2021/2022
European Credit Transfer and Accumulation System (ECTS)	1
Language	ITALIAN
Academic calendar (starting and ending date)	IV Bimester
Attendance	Mandatory

Professor/ Lecturer	
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Virtual headquarters	Codice Teams: pj9711q
Tutoring (time and day)	Tuesday, Wednesday, Thursday: 13: 30-16: 30. Reservation by email is preferable.

Syllabus	
<b>Learning Objectives</b>	Students will need to recognize the risk associated with the workplace. Students will have to know how to handle biological material and know the risk of exposure to physical and chemical agents. Students will have to know the environments that are potentially dangerous for their health. Through a correct approach to the attendance of facilities (laboratories, clinics, autopsy rooms, clinics) and the safe use of tools, protective devices or potentially dangerous substances, they will be able to assume the skills to carry out activities in safe conditions, particularly in the approach to animals and related diseases.
<b>Course prerequisites</b>	The student must have basic knowledge of Biology, General and Inorganic Chemistry, Biochemistry and Physics.
<b>Contents</b>	Regulatory compliance required by law on safety in the workplace and biosecurity (DL 626/94, DL 81/08 and subsequent updates. Uniba health and safety regulations (DR 1144 of 18/04/2018). Collective protection devices (DPC), use of equipment, Personal Protective Equipment (PPE). Health and safety signage. First aid, behaviour to adopt in case of emergencies and fires. Definition of risk and hazard (Risk assessment and hazard analysis). Chemical Risk: toxicity of substances, short- and long-term effects. Pictograms and safety data sheets of the substances. Biological risk: pathogens and classification of zoonotic agents for human risk purposes. Risk from genetically modified microorganisms (GMOs) Categories of individuals at particular risk Organization of laboratories for the manipulation of zoonotic agents Pathogens for animals but not for humans, requiring strict rules of biosecurity in handling (Veterinary Police Regulations). Physical risk in veterinary laboratories and university facilities (radiation, noise, vibrations, electromagnetic fields). Radio protection. Risk related to contact with animals and correct approach to the sick and / or hospitalized animal. Biosecurity in veterinary clinics / surgical rooms, necropsy rooms. Enclosures. Waste disposal management. Chemical and biological spill-over. Concept of sustainability in the use and disposal of reagents: green chemistry.
<b>Books and bibliography</b>	<ul style="list-style-type: none"> <li>• Decreti legislativi 626/94, 81/08.</li> <li>• Regolamento salute e sicurezza di Uniba (DR 1144 del 18/04/2018).</li> </ul>

	<ul style="list-style-type: none"> <li>• Manuale per la sicurezza nei laboratori del Dipartimento di Medicina Veterinaria, a cura della dott.ssa Costantina Desario. Laboratory biosafety manual , 3rd edition (<a href="http://www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf">www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf</a> Edizione italiana: Manuale di sicurezza nei laboratori 3 AIREPSA 2005 <a href="http://www.who.int/csr/resources/publications/biosafety/ManualBiosafety.pdf">http://www.who.int/csr/resources/publications/biosafety/ManualBiosafety.pdf</a>).</li> <li>• Rischio chimico nei laboratori Manuale Inail. Edizioni Inail 2015 (<a href="https://www.inail.it/cs/internet/docs/rischio_chimico_manuale_laboratori.pdf">https://www.inail.it/cs/internet/docs/rischio_chimico_manuale_laboratori.pdf</a>)</li> <li>• Biosecurity SOP applied to the Faculty of Veterinary Medicine of the University of Liège. 2010 (<a href="http://www2.fmv.ulg.ac.be/actualites/Biosecurity_Manual_Final_6Jan10.pdf">http://www2.fmv.ulg.ac.be/actualites/Biosecurity_Manual_Final_6Jan10.pdf</a>)</li> <li>• Siti internet: Center for Diseases control (CDC, <a href="http://www.Cdc.gov">www. Cdc.gov</a>), World Health Organisation (<a href="http://www.who.int">www. who.int</a>), Office international des Epizooties (<a href="http://www.oie.int">www.oie.int</a>)</li> <li>• International Veterinary Biosafety Workgroup (<a href="http://ivbw.camp9.org">http://ivbw.camp9.org</a>).</li> </ul>
<b>Additional materials</b>	

<b>Work schedule</b>			
<b>Hours</b>			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
35	0	25	10
<b>ECTS</b>			
1	0	1	
<b>Teaching strategy</b>			
<p>Guided tour of the facilities of the Veterinary Medicine Department, with the correct use of protective equipment.</p> <p>Simulation in the laboratory and in the class 3 laboratory of the infectious disease section of risk situations or emergencies. Viewing of videos and consultation of online sites on the topics covered in class.</p>			
<b>Expected learning outcomes</b>			
<b>Knowledge and understanding on:</b>		<ul style="list-style-type: none"> <li>o recognize and assess the chemical risk;</li> <li>o recognize and evaluate exposure to physical and biological agents;</li> <li>o recognize dangerous situations in the work environment, particularly in the facilities in which biological material is used or in contact with animals.</li> </ul>	
<b>Applying knowledge and understanding on:</b>		<ul style="list-style-type: none"> <li>o Ability to apply knowledge independently in interpreting safety signs, safety data sheets of chemical reagents and forms related to biological and physical risk.</li> <li>o Ability to apply knowledge in the correct use of collective and individual protective equipment.</li> <li>o Ability to apply knowledge in the correct approach to animals and the infectious diseases transmitted by them.</li> </ul>	
<b>Soft skills</b>		<ul style="list-style-type: none"> <li>• Making informed judgments and choices <ul style="list-style-type: none"> <li>o Ability to analyze the operational criticalities of a process;</li> <li>o Ability to apply knowledge to work in safe conditions.</li> <li>o Ability to interact with colleagues in compliance with common rules</li> </ul> </li> </ul>	

	<p>during the work phases;</p> <ul style="list-style-type: none"> <li>○ Acquire the appropriate preparation for any emergencies;</li> <li>○ Ability to critically use notions and data;</li> <li>○ Ability to propose solutions in problematic situations.</li> </ul> <ul style="list-style-type: none"> <li>● Communicating knowledge and understanding <ul style="list-style-type: none"> <li>○ Ability to adopt technical-scientific language to adequately communicate experimental results;</li> <li>○ Ability to work in a team, adopting adequate communication and interaction strategies.</li> </ul> </li> <li>● Capacities to continue learning <ul style="list-style-type: none"> <li>○ Ability to understand and critically evaluate the scientific literature;</li> <li>○ Ability to independently investigate topics of professional interest.</li> </ul> </li> </ul>
<b>Assessment and feedback</b>	
Methods of assessment	<p>The verification of the results achieved by the student will be conducted:</p> <ul style="list-style-type: none"> <li>- during the course, through flip teaching sessions in which the student's autonomy and ability to correctly express concepts will be assessed</li> <li>- at the end of the course, through theoretical and practical questions that will ensure knowledge and understanding of the topics covered</li> </ul>
Evaluation criteria	<ul style="list-style-type: none"> <li>● Knowledge and understanding <ul style="list-style-type: none"> <li>○ Ability to express the acquired knowledge in an organic and in-depth way.</li> </ul> </li> <li>● Applying knowledge and understanding <ul style="list-style-type: none"> <li>○ Ability to perform cross-links between different disciplines and provide appropriate examples.</li> </ul> </li> <li>● Autonomy of judgment <ul style="list-style-type: none"> <li>○ Ability to analyze, synthesize and evaluate.</li> </ul> </li> <li>● Communicating knowledge and understanding <ul style="list-style-type: none"> <li>○ Exposing capacity and clarity;</li> </ul> </li> <li>● Communication skills <ul style="list-style-type: none"> <li>○ ability to use specialized terminology.</li> </ul> </li> <li>● Capacities to continue learning <ul style="list-style-type: none"> <li>○ Ability to re-elaborate knowledge and transfer it into new and different situations.</li> </ul> </li> </ul>
Criteria for assessment and attribution of the final mark	<p>The assessment of knowledge will take place through a written test, with the aim of ascertaining the learning of the subject and the acquisition of the necessary knowledge in terms of biosecurity by the student. There is no vote, but an eligibility, which will be achieved after passing 15 out of 20 multiple choice quizzes. The final suitability of the Biosafety exam in laboratories and in the relationship with animals will be acquired after positive verification (suitability) in Practical Activities I and II.</p>
<b>Additional information</b>	