

**Organising  
institution**

Università degli Studi di Padova  
Dipartimento di Biomedicina Comparata e Alimentazione - BCA  
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**Visiting  
Professor**

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**Course Title  
and  
Description**

**Understanding Pathology for Animal care**

The project is based on the creation of an 8-hours mini-course aiming to increase the awareness of the second-year students of the Animal Care Bachelor towards animals used in research, through a problem-based learning approach oriented to the professional work-place and to the acquisition of critical skills.

Therefore, 4 different scenarios will be proposed involving animal models (e.g. rodents, primates), linked to research projects (e.g. vaccine prophylaxis, metabolic disease, cognitive degeneration, infectious disease) and to different pathological circumstances.

We will present clinical cases related to laboratory animal management and care in study scenarios building on basic scientific knowledge presented in the General pathology course, and continuing with a critical-thinking approach in the development of skills such as team observation, direct self-learning, communication, and peer assessment.

The educational path will be based on four lessons lasting 2 hours each, in the incoming second semester (A.Y. 2021-2022).

Each lesson will be divided into 4 different parts:

1) Animal model design: (eg pharmaceutical industry and university animal housing and research, research aimed at therapeutic testing).

-Explanation of the animal model (choice of an animal species, literature, model state of the art).

-Number of animals (based on the 3R principle), housing conditions, personnel involved.

-Purpose of the project (aim and expected results).

2) Type and basis of model: classification in the context of infectious/inflammatory, neoplastic, degenerative pathology, pathological description and/or pathophysiology of the disease. The basic tool will be the reference to a pathological condition already discussed previously in the general pathology course in order to share with the students the importance of studying in understanding the disease. The pathological association of the model with human disease will be explained at the cellular, tissue and organ level.

3) Clinical and pathological characterization of model: the student will be guided by the speaker in the observation of the clinical and pathological findings presented. Through scanned slide acquisition tools, portions of histological preparations, stained with different techniques, will be shown to frame the lesion at a microscopic level. In other situations, for example, the images related to the post mortem findings will be shown to share how the samples were taken, tissue storage, and how the samples were prepared for subsequent analyses. In the case of diseases that involve cognitive degeneration, the videos relating to the decay of the animal's cognitive conditions and the evaluation score sheets will be shared.

4) Management and/or therapeutic intervention: this portion will focus on the role of various professional figures involved to control or treat the pathological condition. The speaker will make available the tools put in place by the staff and according to the

specific project for the assurance of animal welfare. Multiple possible scenarios will be discussed individually and in groups.

At the end of the mini-course, an increase in awareness of the professional role and basic knowledge that an animal care professional can perform within a laboratory animal facility is expected.

**Period**

24/05/2021 – 07/06/2021

**Course Level**

International Bachelor Degree in Animal care