UAB
Universitat Autònoma de Barcelona

2020/2021

Molecular Bases and Disease Mechanisms

Code: 102658
ECTS Credits: 3

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OT	5	0

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)

Some groups entirely in English: No

Some groups entirely in Catalan: Yes

Some groups entirely in Spanish: No

Teachers

Maria Fátima Bosch Tubert

Marcel Jiménez Farrerons

Fernando de Mora Pérez

Carlos Alberto Saura Antolin

Verónica Jiménez Cenzano

Prerequisites

There are no prerequisites for taking this course. However, it is recommended to revise the contents of Biochemistry, Physiology and Pathology

Objectives and Contextualisation

The general objective is that the student understands the molecular mechanisms of the disease, that is, which are the underlying biochemical and physiological processes, whose imbalance leads to the appearance of certain pathologies.

Currently, biomedical research is focused on the unraveling of the molecular mechanisms that cause the disease. It is from this molecular knowledge that new therapeutic strategies can be identified, to design new drugs against known molecular targets and to establish effective prevention mechanisms.

In this context, the veterinarian plays an important role and can not stand aside, as it has the clinical basis necessary to know the applicability of the research.

This subject intends to complement essential basic knowledge for the comprehensive understanding of pathological processes.

The subject focuses on diseases of great importance in human medicine due to their great impact, and which are the subject of very active basic research, both in our environment and in the international arena. The final

objective is to bring the veterinarian closer to Human Medicine in order to enhance his/her role in Biomedical Research Centers, Pharmaceutical Industries, Animal Facilities, Tissue Banks, etc.

Competences

- Apply scientific method to professional practice, including medicine
- Demonstrate knowledge and understanding of structural and functional disorders of the animal organism.

Learning Outcomes

1. Apply scientific method to professional practice, including medicine
2. Explain the molecular and physiological bases of the pathologies of greatest interest in experimental animals.

Content

LECTURE TOPICS

1) Cancer

2) Hereditary diseases of the musculo-skeletal system

3) Metabolic diseases (Type I and II diabetes, obesity)

4) Hereditary storage diseases (mucopolysaccharidosis)

5) Cardiovascular diseases

6) Diseases of the central nervous system (Alzheimer's disease)

7) Digestive diseases

8) Respiratory diseases

SEMINARS

Students must prepare and perform an oral presentation of the molecular and physiological basis of a disease not included in the lectures. After the presentation, questions will be asked to the student for discussion.

PRACTICAL WORK

There is no practical laboratory work.

Methodology

The methodology used in this subject combines theoretical lectures where the teacher exposes the most relevant
The student is suposed to perform the following activities:
• Presential classes with ICT support explaining the basic concepts of the
• Self-learning work, individually or in groups, to prepare the topic, which

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Seminars	4	0.16	2
Sessions at the computer room	1	0.04	1, 2
Theoretical lectures	21	0.84	2
Type: Supervised			
Preparation of self-learning presentation	14	0.56	2
Type: Autonomous			
Study and bibliographic searches	33	1.32	2

Assessment

The evaluation system is organized in three tests. The final qualification is obtained from the sum of the qualificat

Test 1. Theory
- Assessment system: short questions. Duration: 1 hour
- Weight in the global rating: 35%.
Test 2. Interpretation of data
- Evaluation system: resolution of cases, exercises, problems. Duration:
- Weight in the global rating: 35%.
According to the regulations of the Faculty of Veterinary Medicine and in
Test 3. Self learning work:
- Assessment system: The oral and written presentation of the work will b
- Weight in the global rating: 30%.

Self-learning work is mandatory. Therefore, the student who does not giv

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Oral presentation	30	1	0.04	1, 2
Test 1	35	0.5	0.02	2
Test 2	35	0.5	0.02	1, 2

Bibliography

- The Biology of Cancer. Robert A. Weinberg. 2nd edition. Garland Science; 2014.

- Principles of Neural Sciences (2012) Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, Steven A. Siegelbaum, A. J. Hudspeth.

- Textbook of Clinical Gastroenterology and Hepatology, Second Edition Editor(s): C. J. Hawkey, Jaime Bosch, Joel E. Richter, Guadalupe Garcia-Tsao, Francis K. L. Chan (2009)
http://onlinelibrary.wiley.com/book/10.1002/9781118321386 (one-line catalog UAB)

- Textbook of Gastroenterology Editor(s): Tadataka Yamada (2012)
http://onlinelibrary.wiley.com/book/10.1002/9781444303254 (one-line catalog UAB)

- Reasearch and review articles contributed by the professors