

Clinical and Therapeutic Pharmacology

Code: 102664
ECTS Credits: 3

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OB	4	2

Errata

Alheli Rodriguez Cortes is the teacher responsible for this subject.

Contact

Name: Jordi Alberola Domingo
Email: jordi.alberola@uab.cat

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

Margarita Arboix Arzo
Carles Cristòfol Adell
Alheli Rodriguez Cortes

Prerequisites

It is recommended that the student has passed the 3rd year course Pharmacology.

Objectives and Contextualisation

The subject is scheduled for the second semester of the fourth year of the Veterinary Degree, when knowledge of general pathology and etiology, clinical and diagnosis of the main diseases and syndromes have already been achieved. The student already has a knowledge of the principles of general pharmacology and knows the large groups of medicines, their mechanism of action and the main desired and undesired effects.

The training objectives of the course are to provide the elements to learn how to select the most appropriate treatment through a reasoned process that involves assessing the efficacy, toxicity, convenience and cost of each available option. In addition, the aim is to make society aware of the dynamics of drugs, from the search for new molecules to approval by the health authorities and pharmacovigilance after marketing, as well as to provide the necessary elements to be able to critically assess the information on new drugs that are marketed.

The contents of the course are complemented with the ECTS on Systematic Therapeutics that this same Department teaches in the course "Medicine and Surgery of Companion Animals II".

Competences

- Analyse, synthesise and resolve problems and make decisions.
- Apply scientific method to professional practice, including medicine
- Demonstrate knowledge and understanding of the general bases of medical and surgical treatments.
- Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
- Perform the most common medical and surgical treatments of animals.
- Prescribe and dispense medicines correctly and responsibly in accordance with legislation, and ensure that the medicines and waste are stored and eliminated properly.
- Recognise when euthanasia is necessary and perform it humanely by employing the appropriate method.
- Safely perform sedations and regional and general anaesthesia, and evaluate and control the pain.

Learning Outcomes

1. Analyse, synthesise and resolve problems and make decisions.
2. Apply scientific method to professional practice, including medicine
3. Define the fundamental criteria to establish a pharmacological treatment.
4. Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
5. Design and interpret clinical tests.
6. Design therapeutic and preventive programs in accordance with animal welfare, animal health and public health standards.
7. Identify and apply therapeutic protocols to the most frequent diseases.
8. Identify and interpret the legislation affecting the prescription and the dispensation of medicines.
9. Identify and interpret the phases of drug development and know the bodies involved in their development and authorisation.
10. Plan support, symptomatic and etiologic pharmacological treatments.
11. Rationally plan the selection of a pharmacological treatment based on the risk vs. benefit ratio in pharmacoeconomics and pharmacovigilance.
12. Recognise basic pharmacological criteria for adequate prescription and defend their suitability.
13. Select and apply the adequate drugs for performing euthanasia.
14. Select suitable drugs to control pain.
15. Select suitable drugs to obtain pharmacological containment.

Content

Clinical pharmacology.

Scientific basis of drug response and individualization. Dynamic, kinetic aspects. Modifications due to age, sex, physiology and pathology. Basis of diagnosis and management of adverse reactions. Polytherapy and drug interactions. Residues. Emerging aspects such as pharmacology.

General Therapeutics

It is responsible for introducing the therapeutic aspects that are most likely to recur in any disease (containment, inflammation, analgesia, fluid therapy, antimicrobials, antifungals, antiparasitics, antineoplastics).

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Methodology

Methodology.

Master classes with the active participation of students.

Seminars in smaller groups. The objective is to reinforce some of the concepts that have been developed in theory classes, through practical exercises, as well as the introduction of new concepts.

Self-learning, basically elaborating written works. Students must develop in writing and in groups certain topics proposed by the teacher.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master class	21	0.84	1, 2, 3, 6, 5, 7, 9, 11, 10, 12, 14, 15, 13
Seminars	4	0.16	1, 2, 3, 6, 5, 7, 8, 9, 11, 10, 12
Type: Autonomous			
Co-evaluation	6	0.24	1, 2, 5, 7, 8, 9, 12
Study	35.75	1.43	1, 2, 3, 5, 7, 8, 9, 11, 10, 12, 14, 15, 13
Written works	7	0.28	1, 2, 3, 6, 5, 7, 9, 11, 10, 12

Assessment

Evaluation.

Final grade = grade - penalties.

Grade = Test (50%) + Written works (30%) + Co-evaluation (20%)

Individual grade: Test

Collective grade: written work and co-evaluations done in groups of about 5 people, always the same throughout the course.

Test

- required
- Minimum result to average with written works: 3.3 out of 10
- ~90 questions
- 4 alternatives only 1 certain
- Correct question: +1
- Incorrect question -1/3
- Question not answered -1/4

To obtain score for written works and co-evaluations, all of them must be completed

Written works

- Not mandatory
- Evaluation by other students and by the teacher
- The group decides if everyone has the same score

Co-evaluations

- Not mandatory
- Evaluation of work done by other students
- Evaluation of the coevaluation by the teacher
- The group decides if everyone has the same score

Penalties

- Seminars: $2^s/10$ (s = unattended seminars; $s \geq 1$)
- Delayed works $2^d/10$ (d = delay in days; $d \geq 1$)

Passed subject

Final grade ≥ 5

Second chance for individual grade

- Short written questions (6-10)
- Minimum result to average with written works: 3.3 out of 10

Second chance for written works

- Not available
- The previously obtained grades are used
- Averaging as indicated above

Passed subject

Final grade ≥ 5

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Co-evaluation	20%	0	0	1, 2, 5, 7, 8, 9, 12
Test	50%	1.25	0.05	1, 2, 3, 4, 6, 5, 7, 8, 9, 11, 10, 12, 14, 15, 13
Written works	30%	0	0	1, 2, 3, 6, 5, 7, 9, 11, 10, 12

Bibliography

Bibliography

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Baggot, JD. The Physiological Basis of Veterinary Clinical Pharmacology. Wiley-Blackwell.
Baños JE, Farré M. Principios de Farmacología Clínica, Masson, Barcelona.
Booth DM. Small Animal Clinical Pharmacology and Therapeutics, Saunders.
Cunningham F, Elliott J and Lees P. Comparative and Veterinary Pharmacology. Springer.
DiBartola SP. Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice. Saunders.
Ettinger SJ and Feldman EC. Textbook of Veterinary Internal Medicine. Saunders.
Gaynor JS. Handbook of Veterinary Pain Management. Mosby.
Giguère S, Prescott JF, Baggot JD, Walker RD, Dowling PM. Antimicrobial Therapy in Veterinary Medicine. Blackwell Publishers.
Kirk's Current Veterinary Therapy. (col·lecció)

Nelson WM and Couto CG. Small Animal Internal Medicine. Saunders.
Papich MG. Saunders Handbook of Veterinary Drugs: Small and Large Animal. Saunders.
Plumb DC. Plumb's Veterinary Drug Handbook. Wiley-Blackwell.
Riviere JE and Papich MG. Veterinary Pharmacology and Therapeutics. Wiley-Blackwell.
The Veterinary Clinics of North America - Small Animal Practice (col·lecció).
Withrow SJ, Vail DM and Page R. Small Animal Clinical Oncology. Saunders.
WEB
Agencia Española de Medicamentos y Productos Sanitarios (<http://www.aemps.es/>): fitxa tècnica dels
medicaments aprovats a l'Estat.
European Medicines Agency (EMA) <http://www.ema.europa.eu/>

Software

No special software is used.