

Pharmacology

Code: 102665
ECTS Credits: 9

2025/2026

Degree	Type	Year
Veterinary Medicine	OB	3

Contact

Name: Carles Cristòfol Adell

Email: carles.cristofol@uab.cat

Teachers

Fernando de Mora Pérez

Carles Cristòfol Adell

Alheli Rodriguez Cortes

(External) Clara Martori Montsant

(External) Margarita Arboix Arzo

(External) María Llorian Salvador

(External) Mercedes Arrúe Gonzalo

(External) professor substitut

(External) Rubén Foj Ibars

Teaching groups languages

You can view this information at the [end](#) of this document.

Prerequisites

PHYSIOLOGY (general concepts on organs and systems functioning)

BIOCHEMISTRY (molecular mechanisms of the basic functions of the organism)

Objectives and Contextualisation

Contextualisation. Third year studies degree (first semester and first half of second semester).

General objectives: Provide the student with the fundamental concepts in the field of pharmacology. Studying drugs, their mechanism of action and their effects, as the basics of therapeutic pharmacology

Educational Objectives: Acquisition of the basic principles of pharmacokinetics (drug delivery, absorption, distribution, metabolism and excretion), and pharmacodynamics (mechanism of action), interactions and adverse drug reactions, underlying the rational and appropriate use of drugs in the different fields of applied pharmacology.

Competences

- Apply scientific method to professional practice, including medicine
- Comunicar la informació obtinguda durant l'exercici professional de manera fluïda, oralment i per escrit, amb altres col·legues, autoritats i la societat en general.
- 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 basic analytical techniques and interpret the clinical, biological and chemical results, and interpret the results of tests generated by other laboratories.
- 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.
- Safely perform sedations and regional and general anaesthesia, and evaluate and control the pain.

Learning Outcomes

1. Apply scientific method to professional practice, including medicine
2. Apply the methodology for pharmacokinetic and pharmacodynamic analysis of molecules and defend the results.
3. Communicate information obtained during professional exercise in a fluid manner, orally and in writing, with other colleagues, authorities and society in general.
4. Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
5. Explain and analyse the molecular and cellular action mechanism of drugs and its effect.
6. Explain and analyse the phases of the transport of drugs through the organism, i.e. drug kinetics.
7. Explain and defend the pharmacology of the agents that act in different systems, organs and apparatus.
8. Explain the drugs that act in the central and peripheral nervous system.
9. Identify adverse effects and interactions of drugs and analyse the benefit-risk quotient in the administration of drugs.
10. Identify and interpret the phases of drug development and know the bodies involved in their development and authorisation.
11. Identify aspects of pharmaceutical technology that are relevant to the stability of medicines.

Content

THEORETICAL / PRACTICAL PROGRAM / EXAMS *

THEORY

Introduction to Pharmacology

I. Pharmacokinetics

ADME processes. Drug administration and absorption. Distribution of drugs in the body. Biotransformation of drugs. Drug excretion. Pharmacokinetics.

II. Pharmacodynamics

General principles of drug action. Pharmacological targets: receptors. Type of receptors. Channel-coupled receptors, G protein-coupled receptors, which control gene transcription. Regulation of the receptors: up- and down-regulation. Other pharmacological targets. Antibodies as selective drugs.

III. Factors that limit drug efficacy

Drug interactions. Adverse drug reactions.

IV. Drugs acting on the Autonomous/peripheral Nervous System

General aspects of the pharmacology of the peripheral nervous system. Pharmacology of the cholinergic transmission. Pharmacology of noradrenergic transmission. Pharmacology of the motor plaque.

V. Systemic pharmacology

Drugs that act on the cardiovascular system. Drugs that act on the respiratory system. Drugs that act on hemostasis. Pharmacology of the digestive system. Drugs with diuretic action. Pharmacological regulation of the endocrine system.

VI. Pharmacology of the Central Nervous System

Central nervous system: general considerations. Analgesics. Sedative and tranquilizer agents. Antidepressants, Antiepileptic and anticonvulsant drugs. Anesthetic drugs.

VII. Anti-inflammatory, anti-allergic and immunomodulatory drugs

Steroids. Non-steroidal anti-inflammatory drugs (NSAIDs). Antihistamine drugs Immunomodulatory drugs. Others agents acting on the immune system.

VIII. Anti-infective drugs

General principles of the pharmacology of antimicrobials. Betalactamics: Penicillins and Cephalosporins. . Aminoglycosides and Polypeptides. Quinolones Sulfamides. Tetracyclines and Phenolic. Macrolides and Lincosamines. Antimicotic and antivirals. Antiparasitic agents: Anthelmintics, Ectoparasitic and Antiprotozoa.

IX. Anticancer drugs

Cytotoxic agents and other anticancer.

X. Others

Sources for obtaining new drugs

- PRACTICAL SESSIONS

Analitical method (experimental lab). Absorption of drugs (experimental lab). Protein binding (experimental lab). Drug excretion (experimental lab). Pharmaceutical Forms and Formulation (experimental lab). Pharmacokinetic cases (classroom). Journal club (classroom). Drug Discovery (seminar). Case study 1 (classroom). Neuromuscular Junction (computer science). Case 2 (classroom). Organ bath: cholinergic drugs (experimental lab). Case 3 (classroom). Cardiolab (computer simulator). How to write a scientific article (classroom).

- EXAMS

3 mid-term exams and one remedial exam

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			

Computer simulation	4	0.16	2, 4, 5, 7, 10
Discussion of articles	2	0.08	1, 3, 5, 7, 9, 10
Discussion of cases	6	0.24	2, 3, 4, 8, 6, 10
Practical classes	12	0.48	1, 2, 5, 6, 11
Seminars	6	0.24	2, 5, 6, 9, 10
Theoretical Classes (Magistral)	50	2	4, 8, 5, 6, 7, 9, 10
Type: Autonomous			
Preparation work / article / simulations	30	1.2	2, 3, 4, 8, 5, 9, 10
Study	103	4.12	8, 5, 6, 7, 9, 10

- Theory classes

- Seminars: The objective is to reinforce some of the concepts that have been developed in theory classes, through practical exercises.

- Practical classes: these are carried out in the experimental laboratory. Students organize themselves to develop the practical experiences where the students learn how to manipulate and administrate the animals under the professor supervision.

- Computer simulations: Here students carry out virtual experiments through Pharmacology programs aimed at reinforcing certain concepts explained in the theoretical program.

- Self-learning: discussion of cases and articles. Students will have to solve on their own account certain cases proposed by the teaching staff, and that they will have to develop in group. A discussion will be made in common. The work groups will be of maximum 4 students and a minimum of 3. In the case of the discussion of articles, the students will have to prepare the oral presentation on different articles proposed by teachers (group work). The work groups will be of maximum 4 students and a minimum of 3.

The proposed teaching methodology may experience some modifications depending on the restrictions to face-to-face activities enforced by health or University authorities.

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Cases (3) (evaluated during session)	4	0	0	1, 2, 3, 4, 8, 5, 6, 7, 11, 9, 10

Drug discovery	4	2	0.08	10
Presentation and discussion article (1) (evaluated during the session)	4	0	0	1, 2, 3, 4, 8, 5, 6, 7, 11, 9, 10
Self learning activity: Neuromuscular junction	4	2	0.08	8, 5
Writing (scientific paper)	4	2	0.08	1, 2, 3, 4, 8, 5, 6, 7, 11, 9, 10
3 Exams	80%	6	0.24	1, 2, 3, 4, 8, 5, 6, 7, 11, 9, 10

The assessment system consists of tests related to the theoretical / practical part of the program (lectures, seminars and practices) and self-study (cases, works and discussion of articles). Attendance to the practical program is mandatory. If a student misses more than one practice without justification, the practical program will be suspended and they will have to repeat it.

Theoretical-practical evaluation:

1. 3 exams with different evaluable activities
2. 6 Team / individual projects.

This subject does not provide for the single assessment system

* Final note:

1. 80% corresponding to the average mark of 3 exams + 20% to the average mark of the works.
2. In order to be able to make the average between the three partials, the student must pass the three partials with at least a 4
3. In order to pass, the average of the three partials must be at least a 5
4. To pass the subject, the final grade, calculated as point 1, must be at least 5

Remedial final exams

The remedial exams consist of an independent test for each partial. Students who have failed a partial with less than a 4, that the average of the three partials is lower than 5, or who want to improve the grade of one of the three exams, they can present themselves in the part that suits them.

Not assessable

In the event that a student has not taken any of the partial exams, or any make-up exams, the subject will be considered non-evaluable

Characteristics:

If the mark obtained in the examination of recovery is inferior to the note of the partial one that was tried to surpass, will take into account the highest note.

REPEATERS

The notes of the teamwork are kept for repeating students. In the event that a repeating student wants to improve the grade of any of the teamwork, he can notify the teaching team to include it in the list of students for the specific practice.

Student's assessment may experiences ome modifications depending on the restrictions to face-to-face activities enforced by health or University authorities

USE OF IA

In this subject, the use of Artificial Intelligence (AI) technologies is allowed as an integral part of the development of the work, provided that the final result reflects a significant contribution by the student in the analysis and personal reflection. The student must clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how these have influenced the process and the final result of the activity. The lack of transparency in the use of AI will be considered a lack of academic honesty and may lead to a penalty in the grade of the activity, or major sanctions in serious cases

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<https://www.uab.cat/biblioteques/> Després a revistes digitals i finalment posar: Flashcards de Farmacologia bàsica (hi ha tb una entrada de Flashcards de Rang&Dales)

ALTRES FONTS ONLINE

<https://pubmed.ncbi.nlm.nih.gov/>

[World Wide Science.org](https://www.worldwide-science.org/)

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Ref seek

BASE (Bielefeld Academia Search Engine)

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Software

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Groups and Languages

Please note that this information is provisional until 30 November 2025. You can check it through this [link](#). To consult the language you will need to enter the CODE of the subject.

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	Catalan	annual	morning-mixed
(PAUL) Classroom practices	2	Catalan/Spanish	annual	morning-mixed
(PAUL) Classroom practices	3	Catalan	annual	morning-mixed
(PLAB) Practical laboratories	1	Catalan	annual	morning-mixed
(PLAB) Practical laboratories	2	Catalan	annual	morning-mixed
(PLAB) Practical laboratories	3	Catalan	annual	morning-mixed
(PLAB) Practical laboratories	4	Catalan	annual	morning-mixed
(PLAB) Practical laboratories	5	Catalan/Spanish	annual	morning-mixed
(PLAB) Practical laboratories	6	Catalan	annual	morning-mixed
(SEM) Seminars	1	Catalan/Spanish	annual	morning-mixed
(SEM) Seminars	2	Catalan/Spanish	annual	morning-mixed
(SEM) Seminars	3	Catalan/Spanish	annual	morning-mixed
(SEM) Seminars	4	Catalan/Spanish	annual	morning-mixed
(SEM) Seminars	5	Catalan/Spanish	annual	morning-mixed
(SEM) Seminars	6	Catalan/Spanish	annual	morning-mixed
(TE) Theory	1	Catalan/Spanish	annual	morning-mixed
(TE) Theory	2	Catalan/Spanish	annual	morning-mixed