



## Information about the subject

**Degree:** Bachelor of Science Degree in Nursing

**Faculty:** Faculty of Medicine and Health Sciences

**Code:** 1210203 **Name:** Pharmacology

**Credits:** 6,00 **ECTS Year:** 2 **Semester:** 1

**Module:** Common basic training

**Subject Matter:** Pharmacology **Type:** Compulsory

**Field of knowledge:** Health sciences

**Department:** Biomedical Sciences

**Type of learning:** Classroom-based learning

**Languages in which it is taught:** Spanish

### Lecturer/-s:

1122E	<u>José Enrique De La Rubia Orti</u> ( <b>Responsible Lecturer</b> )	joseenrique.delarubi@ucv.es
1212A	<u>Isaias Salvador Sanmartin Santos</u> ( <b>Responsible Lecturer</b> )	ISAIAS.SANMARTIN@UCV.ES
1212B	<u>Maria Rossana Estelles Leal</u> ( <b>Responsible Lecturer</b> )	mariarossana.estelles@ucv.es
1212C	<u>Maria Rossana Estelles Leal</u> ( <b>Responsible Lecturer</b> )	mariarossana.estelles@ucv.es
1212E	<u>Isaias Salvador Sanmartin Santos</u> ( <b>Responsible Lecturer</b> )	ISAIAS.SANMARTIN@UCV.ES
1212F	<u>Isaias Salvador Sanmartin Santos</u> ( <b>Responsible Lecturer</b> )	ISAIAS.SANMARTIN@UCV.ES
CAJE	<u>Maria Rossana Estelles Leal</u> ( <b>Responsible Lecturer</b> )	mariarossana.estelles@ucv.es



## Module organization

### Common basic training

Subject Matter	ECTS	Subject	ECTS	Year/semester
Anatomy	6,00	Human and Functional Anatomy	6,00	1/1
Physiology	12,00	Human Physiology	6,00	1/2
		Physiopathology	6,00	2/1
Biochemistry	6,00	Clinical Biochemistry	6,00	1/1
Biostatistic	6,00	Biostatistics and Research Methodology	6,00	1/2
Psychology	6,00	Psychology of Care	6,00	1/1
Pharmacology	6,00	Pharmacology	6,00	2/1
Nutrition	6,00	Nutrition and Dietetics	6,00	2/1
ICT	4,50	ICT	4,50	This elective is not offered in the academic year 24/25
English	6,00	English	6,00	1/2
Life support	6,00	Emergency Care and Life Support	6,00	4/1

## Recommended knowledge

A general knowledge of physiology, biochemistry and general biology is recommended but not required.



## Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 To explain the principles of action (pharmacokinetics and pharmacodynamics), use and indications, as well as the most important or common side effects, contraindications, and adverse reactions of the main pharmacological groups.
- R2 To relate the names of common drugs to their pharmacological group and therapeutic action.
- R3 To identify individual physiological factors that modulate the response to pharmacological treatment.
- R4 To interpret treatment orders, particularly dose calculations, in different clinical situations.
- R5 To apply acquired pharmacological knowledge in interpreting medication leaflets and explaining them correctly to the general public.
- R6 To apply drug administration guidelines through different routes under the principles of clinical safety in medication administration.



## Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students have demonstrated possession and understanding of knowledge in an area of study that is at the core of general secondary education, and is often at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.				X
CB2	Students are able to apply their knowledge to their work or vocation in a professional way and possess the skills usually demonstrated by developing and defending arguments and solving problems within their area of study.				X
CB3	Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues.		X		
CB4	That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.				X
CB5	Students have developed those learning skills necessary to undertake further study with a high degree of autonomy.				X
GENERAL		Weighting			
		1	2	3	4
6	To base interventions in nursing on scientific evidence and on the available means.				X
9	To promote healthy life spans, to promote taking care of each person by themselves and support the maintenance of preventive and therapeutic measures.		X		
10	To protect the health and well-being of persons, family or groups, guaranteeing their health and safety.				X
16	To understand the systems of information related to health.			X	



SPECIFIC	Weighting			
	1	2	3	4
3b				X
4b				X
5b				X



## Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6	70,00%	Theoretical written exams
R4, R5	25,00%	Practical tests and works
R1, R2, R3, R4, R5, R6	5,00%	Attendance and active participation

### Observations

#### ADDITIONAL INFORMATION:

##### Mention of distinction

According to art. 22 of the Regulatory Regulations for the Evaluation and Qualification of UCV Subjects and RD 1225/2003, the Mention of Distinction may be granted by the assigned lecturer to students who have obtained an "outstanding" qualification. The number of Mentions of Distinction that can be awarded may not exceed 5% of the students included in the same official record, unless it is less than 20, in which case a single mention may be awarded.

##### Development of the subject in second and successive enrollments.

The student will enroll in a group S (students who did not pass the previous academic year), which does not have teaching as such. The course will be taught in the same semester as the previous academic year. Depending on the number of students they will be included in the ordinary group or they will follow small group sessions with the assigned lecturer

##### Written expression

Spelling mistakes, grammatical inconsistencies and sms language in assignments, exams or other assessment tools mean the loss of 10% of the grade awarded to the activity or test. This applies to all assessment tools.

##### Multiple choice tests

The following correction formula will be applied in the final exam:  $A - (E/n - 1)$ , where n is the number of alternative answers (A: correct answers; E: failures).

##### Exams

The final exam constitutes 70% of the final grade for the course (7 points). It consists of two parts:

- A written test (5 points), which is a multiple choice test on the theory course content. It is necessary to obtain at least 45% of the score in this test to be able to average with the rest of the assessment tool ("Practical Activities and Course Work" and "Attendance and Active Participation").
- A written test based on practical content (2 points).



The theory part will consist of multiple choice questions about all the theory contents of the course (UD 1, 2, 3 and 4). The practical part will consist of questions about laboratory practice and basic drug calculation.

During the course, we will carry out an evaluable activity in the form of a multiple-choice test on the contents of didactic units 1 and 2. This activity does not eliminate the subject matter of Units 1 and 2 for the final exam.

### Exchange students

The compulsory in-campus activities (seminars, presentations...) will be adapted by the lecturer so that UCV students participating in an exchange program can perform them and submit them online, mainly through the UCV virtual Campus.

The UCV student participating in the exchange program must submit online activities within the deadlines, in addition to taking the exam at the UCV on the official date. It is the responsibility of the student to inform the lecturer about the exchange so that the lecturer can adapt the teaching methodology if necessary. If the official exam needs to be brought forward or postponed due to the exchange, the student must request it in advance.

EXAM IN SECOND AND SUCCESSIVE ENROLMENTS. Same as described above.

### MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

## Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 Exposition of contents by the teacher, analysis of competencies, explanation and demonstration of abilities, skills and knowledge in the classroom.
- M2 Group work sessions supervised by the teacher. Case study, diagnostic analysis, problems, field study, computer room, visits, data search, libraries, network, Internet, etc. Significant construction of knowledge through student interaction and activity.



- M3 Supervised monographic sessions with shared participation.
- M5 Activities developed in spaces and with specialized equipment.
- M6 Personalized attention and in small groups. Period of instruction and/or orientation carried out by a tutor with the objective of reviewing and discussing the materials and topics presented in the classes, seminars, readings, completion of assignments, etc.
- M7 Set of oral and/or written tests used in the initial, formative or summative evaluation of the student.
- M8 Student study: Individual preparation of readings, essays, problem solving, seminars, papers, memoirs, etc. To expose or deliver in the theoretical classes, practical classes and/or small group tutorials. Work done on the university platform ([www.plataforma.ucv.es](http://www.plataforma.ucv.es)).
- M9 Group preparation of readings, essays, problem solving, papers, memoirs, etc. To present or deliver in the theoretical classes, practical classes, seminars and/or small group tutorials. Work done on the university platform ([www.plataforma.ucv.es](http://www.plataforma.ucv.es)).





## IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
In-campus interactive lecture M1, M2, M3, M7	R1, R2, R4, R5, R6	38,00	1,52
Practice Classes M2, M8, M9	R1, R2, R3, R4, R6	12,00	0,48
Seminar M3	R1, R5, R6	4,00	0,16
Laboratory M2, M5	R6	2,00	0,08
Tutorial M2, M6	R1, R3, R5, R6	2,00	0,08
Evaluation M7	R1, R4, R5, R6	2,00	0,08
<b>TOTAL</b>		<b>60,00</b>	<b>2,40</b>

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Student's self-employment M8	R1, R2, R3, R6	75,00	3,00
Group work M9	R1, R2, R3, R6	15,00	0,60
<b>TOTAL</b>		<b>90,00</b>	<b>3,60</b>



## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Didactic unit 1	<b>Introduction to Pharmacology.</b> Receptor theory. Reading drug prescriptions. Drug weights and measurements. Mathematical calculations of drug doses.
Didactic unit 2	<b>General pharmacology and applied to nursing practice.</b> Pharmacokinetics and Pharmacodynamics. Absorption. Routes of drug administration. Distribution. Metabolism and Excretion. Elimination. Pharmaceutical forms. Drug toxicity. Drug interactions. Adverse drug reactions. Pharmacovigilance.
Didactic unit 3	<b>Pharmacology of the Autonomous Nervous System.</b> Anatomy and Physiology of the Autonomous Nervous System. Cholinergic antagonists and agonists. Adrenergic antagonists and agonists.



Enviar Didactic unit 4

**Special pharmacology.** Drugs for infectious diseases. Introduction to chemotherapy. Inhibitors of cell wall synthesis (Penicillins and Cephalosporins). Inhibitors of protein synthesis. Sulfamides and Trimethoprim. Urinary antiseptics: quinolones. Drugs for tuberculosis and leprosy. Antifungals. Antiparasitics: anthelmintics and antiprotozoa. Antiviral drugs. Pharmacology of the Cardiovascular System and blood. Drugs that improve cardiac contractility. Antihypertensive. Antianginal. Drugs used in heart failure. Antiarrhythmics. Drugs to lower cholesterol and lipoprotein levels. Drugs that act on the blood: anticoagulants, thrombolytics, antianemic. Pharmacology of the Central Nervous System. Hypnotics and anxiolytics. Neuroleptics. Antiepileptic drugs. Antiparkinsonians. Antidepressants. Opioid narcotics. General and local anesthetics. Immune modulators and vaccines. Cancer drugs. Drugs that intervene on the Endocrine System. Insulin and Glucagon. Oral hypoglycemic. Hypothyroidism and Hyperthyroidism. Sex steroids. Adrenocortical hormones. Toxicology and poisoning. Antihistamines. Drugs that act on the Respiratory System. Drugs that act on the gastrointestinal tract and nutrition. Anti-inflammatory and non-narcotic analgesics. Drugs for headache and migraine. Drugs for osteoporosis. Muscle relaxants. Oxytocics and uterine relaxants. Drugs that affect the renal system. Drugs in dermatology. Ophthalmic drugs. Other drugs. Pharmacology of urgency. Drug toxicology.



## Temporary organization of learning:

Block of content	Number of sessions	Hours
Didactic unit 1	7,00	14,00
Didactic unit 2	10,00	20,00
Didactic unit 3	3,00	6,00
Enviar Didactic unit 4	10,00	20,00



## References

### Basic references

"Farmacología. Texto y atlas", Klaus Mohr, Heinz Lullmann, Lutz Hein. Ed. Médica Panamericana; 6ª edición, 2010.. Book that provides an excellent summary treatment of the subject, with extraordinary diagrams. Highly recommended In Spanish.

### Reading materials

Vademecum ONLINE. Access is through the GUEST / GUEST username and password (both in capital letters) <https://botplusweb.portalfarma.com/botplus.aspx>

"Farmacología práctica para las Diplomaturas en Ciencias de la Salud". Ahumada, Santana y Serrano; Editorial Díaz de Santos SA, 2002.. Textbook oriented to teaching in Nursing, Physiotherapy and Podiatry Diplomas. It stands out for its practical and simple approach and its emphasis on the real use of pharmacology in the hospital environment.

"Principios de Farmacología Clínica. Bases científicas de la utilización de medicamentos". Baños-Díez y Farré Albadalejo. Editorial Masson, 2002.. ISBN 84-458-1166-5. Excellent text of Clinical Pharmacology by Spanish authors, adjusted to the health reality of our country. Highly recommended

"Clinical calculations". LeFever&Marshall. Elsevier-Saunders, 2004. Good book of calculations in clinical pharmacology for nursing.

"Farmacología". Humphrey P. Rang, Maureen M. Dale, James M. Ritter, Philip Moore. 8th edition. ISBN 9788490229583. Elsevier, 2016. Excellent general pharmacology text that emphasizes the mechanistic aspects of the mode of action of drugs. It stands out for its pleasant style and easy reading.

"Pharmacology for Nursing Care" R. A. Lehne. Saunders; 10 edition. Very good book on clinical pharmacology for nursing. Excellent both the writing and the contents, extremely complete. Highly recommended

"Farmacología Humana". Florez, J. 6th edition. Editorial Elsevier-Masson. Barcelona, ??2013. Book of Spanish university teachers, a classic in the teaching of pharmacology in Spain.