

Teaching Guide of the subject

Year 2026 - 2027

## PHARMACOLOGY

Code: 106100

ECTS credits: 6

| Qualification          | Types     | Course   | Semester |
|------------------------|-----------|----------|----------|
| <b>2500891 Nursing</b> | <b>FB</b> | <b>2</b> | <b>1</b> |

| Contact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Use of languages                                                           |
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| <p><b><u>Responsible:</u></b></p> <p>Molina Perelló, Pol<br/> <a href="mailto:pmolinap@santpau.cat">pmolinap@santpau.cat</a></p> <p><b><u>Teaching staff:</u></b></p> <p>Antonijoan Arbos, Rosa M<sup>a</sup><br/> <a href="mailto:rantonijoana@santpau.cat">rantonijoana@santpau.cat</a></p> <p>Molina Perelló, Pol<br/> <a href="mailto:pmolinap@santpau.cat">pmolinap@santpau.cat</a></p> <p>Juncosa Paris, Adriana<br/> <a href="mailto:ajuncosap@santpau.cat">ajuncosap@santpau.cat</a></p> | <ul style="list-style-type: none"> <li>Group 1 : <b>Catalan</b></li> </ul> |

## Prerequisites

There are no official prerequisites.

## Contextualisation and objectives

This subject is part of the Basic Sciences, Pharmacology subject and is planned in the second semester of the Bachelor's Degree in Nursing.

Medicines are one of the main resources in the therapeutic process, since most curative interventions and certain preventive actions include them as an intermediate mechanism to achieve a specific health goal.

The use of medications is a common occurrence and their management is shared by different health professionals who participate, at all levels of care.

The nursing professional has a very important role in this process where they participate responsibly in the preparation and administration of medications, in the assessment and control of their therapeutic and adverse effects, in pharmacological education as well as in the assessment and evaluation of adherence to treatment.

The purpose of this course is for the student to apply the necessary measures for the correct administration of medications, based on knowledge of the pharmacological characteristics and their clinical indication.

### **Learning objectives of the subject**

1. Identify the different pharmacological groups
2. Describe the main adverse reactions and interactions
3. Identify the general principles of the different pharmacological therapies
4. Describe the general features of the treatment of the patient in the most prevalent diseases
5. Describe the basic principles of nursing prescription and its legal framework.
6. Identify the health products linked to nursing care and their main indications.
7. Analyse the use, indication and mechanisms of action of drugs and medical devices in accordance with nursing practice.
8. To evaluate the benefits, risks and possible adverse reactions associated with the administration of medications.
9. Integrate scientific evidence data into decision-making related to pharmacological therapy.
10. Apply the necessary safety measures in the administration of drugs according to the different routes.

### **Learning Outcomes**

| <b>Learning Outcomes (RAT)</b>                                                                                                                                                                                                                                                                                                | <b>LEARNING OUTCOMES OF THE SUBJECT (RAM)</b>                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KT10. Identify the drugs, medical devices and advice that the nurse can prescribe or indicate according to current legislation.                                                                                                                                                                                               | KM11. Describe the basics of nursing prescription<br>KM12. Identify the use and indication of health products linked to nursing care<br>KM13. Identify the different groups of drugs, the principles of their authorisation and the routes of administration, as well as their use, indication and mechanisms of action |
| ST04. To make clinical judgments, based on clinical and care practice guidelines and applying diagnostic and therapeutic reasoning in the provision of care.                                                                                                                                                                  | SM01. Use evidence data in professional practice                                                                                                                                                                                                                                                                        |
| ST08. Select the uses, indications and mechanisms of action of the drugs and medical devices that the nurse may prescribe or indicate, in accordance with current legislation.                                                                                                                                                | SM04. Select the uses, indications and mechanisms of action of drugs and medical devices that can be prescribed or indicated by the nurse, in accordance with current legislation.<br>SM05. Evaluate the benefits and risks of drug administration and potential adverse reactions                                      |
| CT01. To apply comprehensive and continuous nursing care in health and social settings, which guarantees the health and well-being of people, their families or the community, based on the available scientific evidence, clinical practice guidelines and current legislation, to guarantee well-being, quality and safety. | CM05. Administer drugs according to the different routes, following the appropriate safety measures<br>CM06. Know the different routes of administration and different characteristics                                                                                                                                  |

## **Contents**

### **MODULE 1. GENERAL PRINCIPLES**

1. Pharmacology and medicines.
2. Dosage forms and routes of administration.
3. Drug cycle in the body I.
4. Drug cycle in the body II.
5. Pharmacokinetic parameters and their physiological significance. Differences according to sex and age. Monitoring.
6. General principles and molecular aspects of the action of drugs.
7. Adverse reactions and pharmacovigilance.
8. Use of drugs in special situations (pregnancy and breastfeeding, child, elderly, kidney and liver failure), drug interactions.
9. Prescription and dispensing of medicines. Pharmaceutical specialities (innovators, generics).
10. Research and development of new drugs: efficacy and effectiveness. Clinical trials.

### **MODULE 2. PHARMACOLOGICAL GROUPS**

- 2.1: Chemotherapy
  - General principles of anti-infective chemotherapy.
  - Antibacterians i anti-mico-bacterians.
  - Anti-fúngics i antivírics.
  - Antiparasitics: protozoa, helminths and ectoparasites.
  - Treatment of patients with infections (respiratory, urinary) and HIV.
  - General principles of antineoplastic chemotherapy.
  - Treatment of cancer patients
  - Treatment of the patient with pain.
- 2.2: Internal environment
  - Hemostasis (coagulation and fibrinolysis).
  - Basics of fluid therapy. Isotonic and hypotonic fluids.
  - Calculation of dose I.
  - Dose calculation II.
  - Treatment of the transplant patient. Immunosuppressants.
- 2.3: Chemical mediators
  - General pharmacology of the autonomic nervous system.
  - Pharmacology of cholinergic transmission.
  - Pharmacology of adrenergic transmission.
  - Pharmacology of serotonin and histamine.
  - Treatment of patients with asthma and COPD. Cough (cough suppressants, mucolytics).
  - Treatment of patients with acid-related pathology (antacids, mucosal protectors).
  - Treatment of patients with gastrointestinal motility pathology (constipation, diarrhea, vomiting).

- 2.4: Cardiovascular System
  - Cardiotonic and antiarrhythmic drugs.
  - Vasodilator drugs.
  - Diuretic and lipid-lowering drugs.
  - Treatment of patients with hypertension.
  - Treatment of patients with heart failure.
  - Treatment of patients with ischemic heart disease.
- 2.5: Endocrine system
  - Pharmacology of the thyroid and blood glucose control.
  - Pharmacology of steroidal hormones (glucocorticoids and mineral corticosteroids).
  - Pharmacology of contraception and treatment of sexual dysfunctions.
  - Treatment of diabetic and obese patients.
  - Treatment of patients with bone pathology and gout.
- 2.6: Central Nervous System
  - General information about CNS neurotransmission I.
  - General information on CNS neurotransmission II.
  - Dopaminergic pathways: dopaminergic and neuroleptic agonists.
  - Noradrenergic and serotonergic pathways: antidepressants and lithium.
  - Amino acid systems: GABA (benzodiazepines).
  - Systems for neuropeptides: opioids.
  - Treatment of patients with emotional alterations (depression, mania, anxiety) and the sleep-wake cycle (insomnia, hypersomnia).
  - Treatment of patients with cognitive alterations (dementia, schizophrenia) and movement disorders (Parkinson's).
  - Drug dependencies.

## **Methodology**

The methodological approach of the subject is based on considering that the protagonist in the teaching-learning process is the student. Students must be active and autonomous throughout the process and teachers must support them by providing the necessary information and resources for learning to take place.

### ***Directed activity:***

The subject is face-to-face with non-compulsory attendance. Expository, participatory and group methodology is used.

### ***Supervised activity:***

Group work is carried out to deepen the topics of the subject content.  
Tutorials can be face-to-face or electronically.

## **Training activities<sup>1</sup>**

| Activity                         | Hours | ECTS | Learning Outcomes                                      |
|----------------------------------|-------|------|--------------------------------------------------------|
| Theory (TE)                      | 38    | 1,52 | KM11, KM12, KM13, SM01<br>SM04, SM05, CM05, CT01, CM06 |
| Seminars                         | 8     | 0,32 |                                                        |
| <b>Type: Supervised</b>          |       |      |                                                        |
| Tutoring                         | 1     | 0,04 | SM01, SM04, SM05                                       |
| <b>Type: Self-employed</b>       |       |      |                                                        |
| Study of queries and biographies | 90    | 3,6  | KM11, KM12, KM13, SM01                                 |

## **Evaluation**

The student has only one call per academic year to pass the subject.

Academic progression and passing the subject are assessed through continuous and formative assessment through two multiple-choice exam tests, a dose calculation test and an individual project.

The indications of the work are established by the teaching staff at the beginning of the course and the presentation of the same must follow the regulations of the EUI to be accepted.

The delay in delivery, maximum 24 hours, will be penalized by subtracting one point from the grade of the work.

Deliveries with longer delays will not be accepted.

The grade of the subject is given by the weighted average of the grades obtained in the tests described, the grade of the two multiple-choice tests must be at least 5.0 to be able to make the weighted average.

**Feedback on the results of the evaluation tests will be made through the classroom and tutorials if necessary.**

**The evaluation rubric of the work is available in the virtual classroom.**

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<sup>1</sup> The teaching staff will allocate approximately 15 minutes once the subject is finished to allow that their students can answer the assessment surveys on teaching performance and the subject.

## Continuous assessment

Continuous assessment will consist of:

- Test 1: **Objective written** test and weights **37.5%**
- Test 2: **Objective written test** and weights 45%. In this test, **the seminars carried out will also be evaluated**
- Test 3: **Written test (calculation of dose I)** and weights 5 %
- Test 4: **Written test (calculation of dose II)** and weights 5 %
- Test 5: **Presentation of work** and weights **7.5%**.

## Single assessment

1. In this subject the student must attend the classroom on the day/days that the seminars are scheduled.
2. The date of the single test will coincide with the date of the last continuous assessment test that appears in the daily programme and in the calendar of training and assessment activities. The written tests will all be taken on the same day.
3. The single assessment will consist of:
  - Test 1:** which will consist of an **objective written test** that weights **37.5%**.
  - Test 2:** which will consist of an **objective written test** that weighs 45% (in this test the seminars carried out will also be evaluated, which count 7.5%)
  - Test 3:** which will consist of a **written test (calculation of dose I)** and weights 5 %.
  - Test 4:** which will consist of a **written test (calculation of dose II)** and weights 5 %.
  - Test 5:** which will consist of the **Presentation of work** and weights **7.5%**.

## Qualification

- 0 to 4.9: Suspense
- 5.0 to 6.9: Passed
- 7,0 a 8,9: Notable
- 9.0 to 10: Excellent (in the event that the student has obtained a grade equal to or greater than 9, he/she may opt, at the discretion of the teacher, for an honors degree).

## Recovery activity

1. A single date is determined for the recovery activity for all students, whether or not they are subject to single assessment.
2. A retake activity is proposed for those students who have been previously evaluated for the set of activities whose minimum weight is equivalent to 2/3 of the total grade of the subject and who have obtained a final grade higher than 3.5 and less than 5 out of 10.
3. This test will consist of an evaluation test to be determined by the teaching staff that will include the contents to which they have not been presented or have not passed, it will be carried out in the period established for this purpose.

4. Group work is not recoverable.
5. In the event that the student passes the retake test corresponding to the failed part, the maximum grade of this will be a 5.
6. The retake grade, if positive, will replace the originally obtained grade with a 5 and the final weighted grade will be recalculated.
7. Once the subject has been passed, it cannot be subject to a new evaluation. Tests that have already been approved will also not be able to be evaluated again.

### **No evaluable**

It is considered that the subject will not be assessable when one of these circumstances is met:

1. Not having delivered any of the continuous assessment activities provided for in the teaching guide.
2. Not having attended any of the practical or compulsory sessions, when these are necessary to assess learning outcomes and as indicated in the teaching guide.
3. Not having taken the final test (exam, written or oral test, work defense, etc.), if This represents an essential percentage of the grade.
4. Not having completed the minimum required participation in training activities (for example, seminars, presentations, forums, etc.), when these are part of the evaluation.
5. Not having submitted the final project or compulsory project, if this constitutes a central evidence of learning of the subject.

### **Exam Review**

Once the final grade has been published, the student can request the revision of the exam within the period determined by the "exam review". Review requests will not be accepted on dates outside the established limit.

### **Procedure in case of copying / plagiarism**

1. Copying **or plagiarism** in any type of evaluation activity constitutes a crime, and will be penalized with a 0 as a grade for the subject, losing the possibility of recovering it, whether it is an individual or group work (in this case, all members of the group will have a 0).
2. If, during the completion of an individual assignment in class, the teacher considers that a student is trying to copy or is discovered some type of document or device not authorized by the teacher, the same will be graded with a 0, without the option of recovery, and therefore, the subject will be suspended.
3. A work, activity or exam will be considered to be "copied" when it reproduces all or a significant part of the work of oneself, another classmate.
4. A work or activity will be considered "plagiarized" when a part of a text by an author is presented as one's own without citing the sources, regardless of whether the original sources are in paper or digital format.

## The use of Artificial Intelligence (AI) technologies

The use of Artificial Intelligence (AI) technologies is regulated according to the type of work to be carried out:

1. In the event that the work aims at personal reflection and meaningful learning by the student, **the use of AI technologies is prohibited** in any of its phases of completion.  
Any work that includes AI-generated fragments (e.g. abstracts, translations, text writing or image creation) will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, as well as greater penalties in cases of seriousness.
2. In other works, **the restricted use of AI technologies is allowed** exclusively in those support tasks, such as bibliographic or information searches, proofreading, translations, and other specific situations that are indicated. In these cases, the student will have to clearly identify which parts have been generated with this technology, specify the tools used and include a critical reflection on how they have influenced the process and the final result of the activity. The non-transparency of the use of AI in this assessable activity will be considered a lack of academic honesty and may lead to a partial or total penalty in the grade of the activity, as well as greater sanctions in cases of severity.

In any case, in the description of each assignment, the teacher in charge will clearly indicate **whether the prohibited or restricted use of AI applies**.

## Aspects of evaluation related to values and attitudes

1. The teacher may decrease the grade of the subject by between 1 and 2 points when the student repeatedly does not respect the indications on the rules of behavior in class.
2. "No lack of respect for classmates or teachers will be tolerated. Homophobic, sexist or racist attitudes will also not be tolerated. Any student in whom any of the attitudes described above are detected will be classified as having failed the subject."

## Formal aspects of written work

In all activities (individual and group) linguistic correction, writing and formal presentation aspects will be taken into account.

## Other considerations

1. All the evaluation tests will be published in the daily program and in the calendar of training and evaluation activities.
2. The date of the single test will coincide with the date of the last continuous assessment test.
3. Students who repeat the subject may request at the beginning of the course to carry out only one final synthesis assessment (article 117, page 46 of the Academic Regulations of the Universitat Autònoma de Barcelona (Approved by agreement of the Governing Council of 7 July 2022, and modified by agreement of the Governing Council of 1 February 2023).

*Students in second or more enrolment who have taken all the assessment tests in the previous year may opt to be assessed with a single synthesis assessment activity. This activity will consist of an exam at the end of the subject coinciding with the written exam of the subject. Students in second or more enrolment who wish to opt for the final exam must notify the teaching staff responsible for the subject in writing two weeks before the published date.*

### **Evaluation activities**

| Activity                                      | Weight | Hours | ECTS | Learning Outcomes                 |
|-----------------------------------------------|--------|-------|------|-----------------------------------|
| <b>Written objective tests:</b>               | 82.5%  | 4     | 0,16 | KM11, KM12, KM13, SM05, SM01      |
| <b>Objective tests</b><br>(Dose calculation): | 10%    | 4     | 0,16 | SM04, SM05, CM05                  |
| <b>Submission and presentation of work:</b>   | 7.5%   |       |      | SM01, SM04, KM12/KM13, SM05 ,CM05 |

### **Bibliography**

#### ***Books:***

#### **PHARMACOLOGY FOR NURSING**

*Author:* Michael Adams; Norman Holland

*Edition:* 2nd Edition. Prentice Hall: 2009

*ISBN:* 97884483225233

*Observations:* It provides the importance of relating pharmacology to pathology. He highlights the limitations of pharmacotherapy in the cure or prevention of diseases.

#### **CLINICAL PHARMACOLOGY FOR NURSING**

*Author:* Mosquera, Galdós

*Edition:* 4th edition. Madrid: McGraw Hill. 2005

*ISBN:* 97 884 481 98060

*Observations:* Classic with a didactic value, well structured and clear. Reference work of the subject.

#### **PHARMACOLOGY IN NURSING**

*Author:* Castells, Hernández

*Edition:* 3rd edition. Barcelona, Elsevier 2012

*ISBN:* 978-84-80868662

*Observations:* Eminently practical work with a new orientation that covers both the essential knowledge for the effective exercise of the interdependent nursing function, related to the administration of drugs,

and those of the independent nursing function related to therapeutic management and compliance, incorporating aspects of the human response in the different stages of life.

**Web links:**

<http://www.fbjoseplaporte.org/2008/>

<http://www.index-f.com/index-enfermeria/revista.php>

<http://www.elsevier.es/es/revistas/nursing-20>

**To the program**

- Moodle
- Kahoot