Teaching Guide of the subject Year 2025 - 2026

PHARMACOLOGY

Code: 106100
ECTS credits: 6

Titulation	Type	Course	Semester
2500891 Nursing	**FB**	**2**	**1**

Contact	Use of languages
Responsible: Molina Perelló, Pol pmolinap@santpau.cat **Teaching staff:** Antonijoan Arbos, Rosa Mª rantonijoana@santpau.cat Molina Perelló, Pol pmolinap@santpau.cat Feliu Ribera, Anna afeliu@santpau.cat Riera Armengol, Pau priera@santpau.cat	• Group 1: **Catalan**

Prerequisites

There are no official prerequisites.

Contextualization and objectives

This subject is part of the Basic Sciences training module, 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 obtain 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 he or she participates 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 subject is for the student to apply the necessary measures for the correct administration of medications, based on knowledge of 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 due to drug administration.
3. Identify the general principles of the different pharmacological therapies.
4. To describe the general features of the patient's treatment in the most prevalent diseases.

Competencies and learning outcomes

Competence	Learning Outcomes
SPECIFIC	
E01. To provide technical and professional health care appropriate to the health needs of the people they serve, in accordance with the state of development of scientific knowledge at any given time and with the levels of quality and safety established in the applicable legal and deontological standards.	**E01.03**. To describe the use and indication of medical devices linked to nursing care. **E01.04.** Identify the different groups of drugs and medical devices, the principles of their authorisation, use and indication, and their mechanisms of action. **E01.05.** Distinguish the principles of use of medicines, evaluating the expected benefits and associated risks and/or effects derived from their administration and consumption.

E10. Protect the health and well-being of the people, family or groups served, guaranteeing their safety.	**E10.01**. Describe the pharmacokinetic principles and pharmacodynamics of the treatments applied. **E10.02.** Identify the elements that may put people's health at risk in relation to the use and management of drugs. **E10.07**. Describe the safety standards to be considered in the event of problems caused by clinical situations related to pharmacological administration in accordance with current regulations.
GENERAL / BASIC	
G04. Act within the field of self-knowledge by assessing inequalities based on sex/gender.	**G04.03.** To analyse differences by sex and gender inequalities in etiology, anatomy, physiology, pathologies, differential diagnosis, therapeutic options, pharmacological response, prognosis and nursing care...
B01. Students must have demonstrated that they understand and have knowledge in an area of study that starts from the basis of general secondary education, and is usually at a level that, although based on advanced textbooks, also includes some aspects that involve knowledge from the forefront of that field of study.	
B03. Students must have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on salient social, scientific, or ethical issues.	

Content

MODULE 1. GENERAL PRINCIPLES

1. Pharmacology and medicines.
2. Dosage forms and routes of administration.
3. Cycle of drugs in the body I.
4. Cycle of drugs 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 medications in special situations (pregnancy and lactation, child, elderly, kidney and liver failure), drug interactions.
9. Prescription and dispensing of medicines. Pharmaceutical specialties (innovative, generic).
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.
  - Antibacterial and anti-myco-bacterial.
  - Anti-fungal and antiviral.
  - Antiparasitics: protozoa, helminths and ectoparasites.
  - Treatment of patients with infections (respiratory, urinary) and HIV.
  - General principles of antineoplastic chemotherapy.
  - Treatment of cancer patients I.
  - Treatment of cancer patients II.
  - Treatment of the patient with pain.
- 2.2: Internal environment
  - Haemostasis (coagulation and fibrinolysis).
  - Bases of fluid therapy. Isotonic and hypotonic fluids.
  - Dose Calculation I.
  - Dose calculation II.
  - Treatment of the transplant patient. Immunosuppressive.

- 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 anti-inflammatory drugs.
  - Vasodilator drugs.
  - Diuretic and lipid-lowering drugs.
  - Treatment of patients with hypertension.
  - Treatment of the patient with heart failure.
  - Treatment of patients with ischemic heart disease.

- 2.5: Endocri System
  - Pharmacology of thyroid and glycemic control.
  - Pharmacology of steroid 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
  - Overview of CNS neurotransmission I.
  - General aspects of CNS neurotransmission II.
  - Dopaminergic pathways: dopaminergic and neuroleptic agonists.
  - Norradrenergic and serotonergic pathways: antidepressants and lithium.
  - Amino acid systems: GABA (benzodiazepines).
  - Neuropeptide systems: opioids.
  - Treatment of patients with emotional alterations (depression, mania, anxiety) and the wakeful-son cycle (insomnia, hypersomnia).
  - Treatment of patients with cognitive impairments (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 information and resources necessary 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 content of the subject.
Tutorials can be face-to-face or electronic.

Training activities

Activity	Hours	ECTS	Learning Outcomes
Theory (TE) Seminars	38 8	1,52 0,32	*E01.03, E01.04, E01.05, E10.01, E10.02, E10.07, B01, B03, G04.03*
Types: Supervised			
Guardianship	1	0,04	*E01.03, E01.04, E01.05, E10.01, E10.02, E10.07, B01, B03, G04.03*
Types: Self-employed			
Study bibliographic consultations	90	3,6	*B01, B03*

The teaching staff will allocate approximately 15 minutes once the subject is finished to allow them to students can answer the assessment surveys on the teaching performance and the subject.

Evaluation

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

Academic progression and completion of the subject are assessed through continuous and formative evaluation through two multiple-choice exam tests, a dose calculation test and individual work.

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.

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

Deliveries in longer delay periods will not be accepted.

The grade of the subject is given by the weighted average of the marks obtained in the tests described, the grade of the two multiple-choice tests must be at least 4.5 in order to make the weighted average.

The results of the evaluation tests will be retroacted through the classroom and tutorials where appropriate.

The work evaluation rubric is available in the virtual classroom.

Continuous evaluation

The continuous evaluation will consist of:

- Test 1: **Objective written test** and weights **37.5%**
- Test 2: **Objective written test** and weights **37.5%.** This test will also evaluate, by means of an objective written test, **the seminars taken,** which will weigh **7.5%**
- Test 3-4: **Written test (dose calculation)** and weights **10%**
- Test 5: **Delivery and presentation of work** and weights **7.5%.**

Unique 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 unique test will coincide with the date of the last continuous assessment test that appears in the daily schedule and in the calendar of training and evaluation activities.

3. The unique assessment will consist of:
   - Test 1 which will consist of **Objective written** test and weights **37.5%.**
   - This test will also evaluate, by means of an objective written test, **the seminars taken** and weigh **7.5%**
   - Test 3-4 which will consist of **a written test (dose calculation)** and weights **10%.**
   - Test 5, which will consist **of delivery and presentation of work** and weights **7.5%.**

Qualification

- 0 to 4.9: Fail
- 5.0 to 6.9: Pass
- 7.0 to 8.9: Remarkable
- 9.0 to 10: Excellent (in the event that the student has obtained a grade equal to or higher than 9, he/she may opt, at the discretion of the teacher, for an honors).

Recovery activity

1. A unique date is set for the remedial activity for all students, whether or not they are eligible for a unique assessment.
2. A remedial 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 content to which they have not taken 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 the same will be a 5.
6. The recovery grade, if positive, will replace the grade originally obtained with a 5 and the final weighted grade will be recalculated.
7. Once the subject has been passed, it may not be subject to a new evaluation.

Not assessable

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

1. Not having submitted any continuous assessment activity provided for in the teaching guide.
2. Not have attended any of the practical or compulsory sessions, when these are necessary to assess specific competences and this is indicated in the teaching guide.
3. Not having taken the final test (exam, written or oral test, job defence, etc.), if this represents an essential percentage of the qualification.
4. Not having completed the minimum required participation in training activities (e.g. seminars, presentations, forums, etc.), when these are part of the assessment.
5. Not having submitted the final work or compulsory project, if this constitutes central evidence of the 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". Requests for review on dates outside the established limit will not be accepted.

Procedure in case of copying/plagiarism

1. Copying **or plagiarism** in any type of assessment activity is a crime, and will be penalised with a 0 as the grade of 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 project in class, the teacher considers that a student is trying to copy or is discovered some type of document or device not authorised by the teaching staff, it will be graded with a 0, with no retake option, and therefore, the subject will be suspended.

3. A work, activity or exam is considered to be "copied" when it reproduces all or a significant part of the work of oneself or 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 on paper or in 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 performed:

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 realization. Any work that includes AI-generated fragments (e.g., summaries, translations, text writing or image creation) is considered academic dishonesty and may lead to a partial or total penalty in the grade of the activity, as well as greater sanctions in cases of severity.

2. In other jobs, **the restricted use of AI technologies is allowed** only in those support tasks, such as bibliographic or information search, text correction, 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 these 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 work, the teacher in charge will clearly indicate **whether the prohibited or restricted use of AI applies.**

Aspects of assessment related to values and attitudes

1. The teacher may reduce the grade of the subject between 1 and 2 points when the student repeatedly does not respect the indications on the rules of behavior in class.
2. "No disrespect for colleagues or teachers will be tolerated. Homophobic, sexist or racist attitudes will not be tolerated either. Any student in whom any of the attitudes described above are detected will be classified as failing the subject."

Formal aspects of written work

In all activities (individual and group) linguistic correctness, writing and formal aspects of presentation will be considered.

Other considerations

1. All the evaluation tests will be published in the daily program and in the calendar of the training and evaluation activities.

2. The date of the unique 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 academic year to take only a 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 amended by agreement of the Governing Council of 1 February 2023).

   Students in the second or higher enrolment who have taken all the assessment tests the previous year may choose to take assessment 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 the second or higher enrolment who wish to opt for the synthesis 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
Objective written tests (2):	37,5% 37,5%	4	0,16	*E01.03, E01.04, E01.05, E10.01, E10.02, E10.07, B01, B03, G04.03*
Report delivery (Dose calculation): **Delivery and presentation of work:**	15% 10%	4	0,16	*E01.03, E01.04, E01.05, E10.01, E10.02, E10.07, B01, B03, G04.03*

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 with pathology. It highlights the limitations of pharmacotherapy in curing or preventing 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: An eminently practical work with a new orientation that encompasses both the essential knowledge for the effective exercise of the interdependent nursing function, related to the administration of drugs, and that 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

Teaching platforms

- Moodle
- Kahoot