COURSE DATA

DATA SUBJECT

Code: 34370
Name: Pharmacology
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1200 - Degree in Nursing	Facultat d'Infermeria i Podologia	2	First quarter
1213 - Grado en Enfermería (Ontinyent)	Facultat d'Infermeria i Podologia	2	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1200 - Degree in Nursing	Pharmacology and dietetics	BASIC
1213 - Grado en Enfermería (Ontinyent)	Farmacología y dietética	BASIC

COORDINATION

ENRIQUE DOMINGUEZ FERNANDO

TRAPERO GIMENO MARIA ISABEL

BRAGE SERRANO RICARDO

SUMMARY

The Pharmacology course within the Nursing degree curriculum belongs to the core subjects block, forming part of the in-depth curriculum. This course is taught in the second year of the degree, in the first semester. The basic objective of Pharmacology is to improve patient care by promoting the safe and effective use of drugs (WHO, 1970).

Nursing practice, in its various forms of general or specialized care, necessarily involves the use of medications and medical devices. Specifically, the nursing care process is especially important during medication administration and pharmacotherapeutic monitoring; nursing care seeks to adapt pharmacological treatment to the changing needs of the patient. Furthermore, nurses currently prescribe medications in Spain (RD 954/2015 and RD 1302/2018), both autonomously and collaboratively.

Therefore, both General Pharmacology and Clinical Pharmacology are fundamental to the training of future

nurses, since rational therapeutics are based almost entirely on the principles acquired through education and training in Pharmacology. Thus, in this subject, the basic principles by which drugs are incorporated into the body, distributed, and eliminated, as well as the bases of their mechanisms of action, will be studied. Subsequently, in the special section, knowledge of the mechanisms of action, pharmacokinetic properties, and therapeutic and adverse effects of the different pharmacological groups will be provided.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

To achieve the objectives and competencies described it is important that the student has a good knowledge of materials that make up the nursing degree, such as anatomy, biology, physiology and pathophysiology.

COMPETENCES / LEARNING OUTCOMES

-

Bachelor's thesis. Cross-disciplinary subject area involving work related to different subjects.

Be able to formulate hypotheses and to gather and critically assess information to resolve problems by applying, among others, the gender approach.

Know the different groups of medicines, the principles of authorisation, their use and indication and their mechanisms of action. Know the use of medicines, evaluating the expected benefits and associated risks and/or the side effects derived from their administration and consumption according to gender difference.

Know the use and suitability of health products linked to nursing care, paying special attention to differences according to age and gender.

Maintain and update professional skills, with particular emphasis on independent learning of new knowledge and skills and motivation for quality in health care.

Offer health education actions using strategies that are appropriate to individuals, families and communities, making scientific information and recommendations available to the population in an understandable language.

Plan and provide nursing care for individuals, families or groups, focusing on health results and evaluating its impact, using guides to clinical practice and care that set out the processes involved in the diagnosis, treatment or care of a health problem.

Work as a team, understood as a basic unit into which professionals and other workers of health care organisations are integrated, structured and organised in single- or multi-disciplinary and inter-disciplinary

teams, as a way of ensuring the quality of health care.

DESCRIPTION OF CONTENTS

1. PRINCIPLES OF PHARMACOLOGY

LESSON 1. PHARMACOLOGY: CONCEPT AND OBJECTIVES
LESSON 2. PHARMACODYNAMICS
LESSON 3. PHARMACOKINETICS
LESSON 4. INDIVIDUAL VARIABILITY
LESSON 5. DRUG INTERACTIONS
LESSON 6. DRUG SAFETY

2. PHARMACOLOGY IN NURSING PRACTICE

LESSON 7. NURSING CARE

* NOTE: The contents of this unit correspond to the theoretical and practical teaching methodology

3. AUTONOMIC NERVOUS SYSTEM

LESSON 8. GENERAL PHARMACOLOGY OF AUTONOMIC NERVOUS SYSTEM

LESSON 9. CHOLINERGIC TRANSMISSION. CHOLINERGIC AGONISTS AND ANTAGONISTS

LESSON 10. NORADRENERGIC TRANSMISSION. ADRENERGIC AGONISTS AND ANTAGONISTS

4. CELLULAR MEDIATORS: ALLERGY. INFLAMATION. PAIN. IMMUNITY.

LESSON 11. HISTAMINE AND ANTIHISTAMINES

LESSON 12. SEROTONIN

LESSON 13. NONSTEROIDAL ANTIINFLAMMATORY DRUGS (NSAIDS)

LESSON 14. OPIOID ANALGESICS

LESSON 15. GLUCOCORTICOIDS

LESSON 16. IMMUNOSUPPRESSIVE DRUGS

5. CARDIOVASCULAR AND BLOOD DISEASE

LESSON 17. DIURETICS DRUG
LESSON 18. INHIBITORS OF THE RENIN-ANGIOTENSIN SYSTEM
LESSON 19. CALCIUM ANTAGONISTS
LESSON 20. ORGANIC NITRATES
LESSON 21. CLASSIFICATION OF BLOOD VOLUMEN DILATING
LESSON 22. ANTIARRHYTHMIC DRUGS
LESSON 23. ANTIHYPERLIPIDEMIC DRUGS
LESSON 24. ANTIPLATELET, ANTICOAGULANT AND FIBRINOLYTIC
LESSON 25. ANTIANEMIC AND HEMATOPOIETIC GROWTH FACTORS

6. RESPIRATORY DISEASE

LESSON 26. DRUGS FOR ASTHMA, COPD AND OTHER RESPIRATORY DISORDERS

7. GASTROINTESTINAL DISEASE

LESSON 27. DRUGS FOR CONTROL OF THE GASTRIC ACID SECRETION

LESSON 28. PHARMACOLOGY OF VOMITING AND INTESTINAL MOTILITY

8. ENDOCRINE DISEASE

LESSON 29. THYROID HORMONES AND ANTITHYROID DRUGS.

LESSON 30. DRUGS USED IN THE TREATMENT OF DIABETES MELLITUS

LESSON 31. FEMALE SEXUAL HORMONES. HORMONAL CONTRACEPTIVES

LESSON 32. BONE METABOLISM. PHARMACOLOGICAL TREATMENT OF OSTEOPOROSIS

9. PSYCHOPHARMACOLOGY

LESSON 33. ANXIOLYTICS AND HYPNOTICS

LESSON 34. ANTIPSYCHOTICS

LESSON 35. DRUGS USED IN THE DISORDERS OF THE MOOD

LESSON 36. ABUSE AND ADDICTION TO DRUGS

10. ANESTHESIA

LESSON 37. GENERAL ANESTHETICS

LESSON 38. LOCAL ANESTHETICS

11. NEUROLOGICAL DISEASE

LESSON 39. ANTIEPILEPTIC DRUGS AND ANTICONVULSANTS DRUGS

LESSON 40. ANTIPARKINSONISM DRUGS

12. ANTI-INFECTIVES

LESSON 41. ANTIMICROBIAL DRUGS: GENERAL ASPECT

LESSON 42. ANTIBACTERIAL DRUGS

LESSON 43. ANTITUBERCULOSIS DRUGS

LESSON 44. ANTIFUNGAL DRUGS

LESSON 45. ANTIVIRAL DRUGS

13. NEOPLASTIC GROWTH

LESSON 46. ANTINEOPLASTIC DRUGS.

14. CLASSROOM PRACTICES

Nursing care. Dues sessions of 4 hours every day.
1. Administration of medications, pharmaceutical forms, preparation and handling and medication errors.

2. Calculation and conversion of the dose

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	2,00
Theory	50,00
Classroom practices	8,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	4,00
Independent study and work	78,00
Preparation of lessons	4,00
Preparation for assessment activities	4,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

8.1. IN-PERSON THEORETICAL MODALITY

Participatory Lecture:

Lectures are essential for students to acquire basic theoretical knowledge of the subject. It is desirable for students to participate during classes, so we will try to create an environment that encourages debate, where students feel encouraged to ask questions and feel comfortable and relaxed doing so. We will also encourage their participation with various activities to increase their engagement in the subject. The theoretical lessons presented in these sessions are posted in the virtual classroom prior to the sessions.

Flipped Classroom Mode

This mode will be applied in certain thematic units of the program. Students will have access to an audiovisual repository in the Virtual Classroom with the necessary content to work on this syllabus. Students will be informed at least two days in advance when each of these contents will be covered in class. On the assigned day, participatory or independent work activities will be carried out in the classroom. In addition, the instructor may propose continuous assessment activities for students to complete individually or in small groups.

8.2. IN-PERSON CLASSROOM PRACTICE

These activities are organized in four sessions, seeking to foster the relationship between theoretical knowledge and its practical application. Each session consists of a short introduction by the instructor (no more than 15-20 minutes). From this point on, a series of assessable practical activities (questions, clinical cases, problems, etc.) are proposed, which students must complete either individually or in small groups (4-6 students). To support these sessions, students are provided with supplementary reading material on the topic to be discussed, prepared by the instructor. This reading material also includes various bibliographic resources that can help students prepare the proposed activities. In addition, in these sessions, we use videos, simulated medications, and medication administration devices to enhance the learning process.

Finally, the Virtual Classroom is used as a means of communication between teachers and students, as well as for the exchange of documents and teaching support materials for exclusive use in the subject.

EVALUATION

1st Block (80% of the overall grade)

Written test consisting of 80 questions consisting of a heading that presents a statement or problem or situation, followed by four answer options, including the correct answer and other plausible answers called "distractions." Each incorrect answer will result in a 0.20 point deduction. The minimum grade required to pass the test is 5 out of 10. This test will assess the theoretical and practical content of the subject.

If a student fails one of the sections of the written exam, the grade shown on the transcript will be the average of both sections out of 10.

The test is divided into two parts, based on thematic units, so that students can take half or all of the syllabus.

- First part: thematic units I to V.

- Second part: thematic units VI to XIII

If a student fails any of the written exam sections, they must sit the failed section in the second sitting.

2nd block (20% of the overall grade)

This grade will only be taken into account for the final grade if the student passes the written exam.

- Classroom exercises (10% of the overall grade): This percentage of the grade is used to evaluate the various activities carried out by the students, presented in the seminars, which they must submit to the professor in their workbooks once the sessions have concluded. Furthermore, attendance at these sessions is mandatory and is a necessary condition for passing the course.
- Continuous assessment (10% of the overall grade): This percentage of the grade is used to evaluate the various activities proposed by the professor that students will complete in face-to-face classroom sessions and/or independently.

If the assessments for this second block are suspended, the student will be asked to submit a new format of activities: a project on a topic related to the theoretical content of the subject, in the case of practical exercises, or new continuous assessment activities.

NOTE: If students are unable to complete the classroom activities (practical exercises and continuous assessment) for justified reasons, the final grade will be 100% of the grade obtained on the in-person written exam.

NOTE: Students enrolled in the 2024-2025 academic year who completed the seminar activities or were assessed on them are not required to do them again during the 2025-2026 academic year.

REFERENCES

- Adelaida Zabalegui Yárnoz y María Lombraña Mencía. Administración de medicamentos. 4ªed. Elselvier Masson; 2024
- Philip Xiu. Lo esencial en Farmacología. 5ª ed. Elservier España; 2019
- Linda Lane Lilley & Shelly Rainforth Collins & Julie S. Snyder. Farmacología y proceso enfermero. 9ª ed. Elsevier España; 2020
- Clive Page. Dale. Farmacología esencial. Elsevier España; 2022
- Todd W. Vanderah. Katzung. Farmacología básica y clínica. 16 ed. McGraw-Hill Education Inc.; 2024.

- Laurence L. Brunton, Björn C. Knollman. Goodman & Gilman. Las bases farmacológicas de la terapéutica 14ª ed. McGraw-Hill; 2023.