Pharmacology

Code: 106100
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500891 Nursing	FB	2

Contact

Name: Belén Pérez Fernández

Email: belen.perez@uab.cat

Teachers

Gisela Gili Serrat

Monique Nakayama Torres

Francesc Jimenez Altayo

(External) Africa Domínguez Oliver

Teaching groups languages

You can view this information at the end of this document.

Prerequisites

There are no prerequisites for taking the course of Clinical Pharmacology. However, it is recommended that students should previously have studied "Structure of the Human Body" and "Human Body's function".

Objectives and Contextualisation

Pharmacology is a 6 ECTS credits' subject and is considered compulsory in the syllabus of the Universitat Autònoma de Barcelona to obtain the Nursing degree.

The therapeutic approach with drugs is one of the pillars in which the control of diseases are based on our present society. Nursing professionals play a very active role in carrying out activities related with the pharmacological therapy. Evaluation of effectiveness, prevention, detection and action in front of unwanted effects, the administration of drugs and, last but not least, health education are functions that must be developed in a systematic and integrated way in their daily work.

The competent development of the functions implies that nursing professionals should be updated periodically in pharmacological procedures and knowledge. Access to reliable sources of information, independent and updated is essential to update the knowledge.

Training objectives:

- To know the different groups of medicaments, the principles of their authorization, the mechanisms of action, the pharmacokinetic and pharmacodynamics characteristics and their main indications.

- To know the expected benefits and the associated risks of the administration or consumption of the different groups of drugs.

- To acquire skills for the development of activities related to pharmacological therapeutics.

- To acquire skills in the search and synthesis of pharmacological information for the resolution of clinical cases.

Competences

- Offer technical and professional health care and that this adequate for the health needs of the person being attended, in accordance with the current state of scientific knowledge at any time and levels of quality and safety established under the applicable legal and deontological rules.
- Protect the health and welfare of people or groups attended guaranteeing their safety.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.

Learning Outcomes

1. Analyse differences by sex and gender inequality in ethiology, anatomy, physiology. Pathologies, differential diagnosis, therapeutic options, pharmacological response, prognosis and nursing care.
2. Describe the main pharmacokinetics and pharmacodynamics of applied treatments.
3. Describe the safety rules to be followed in cases of problems arising from clinical situations related to pharmacological administration in accordance with the current regulations.
4. Describe the use and indications of health products used in nursing care.
5. Identify elements that could place at risk the health of people in relation to the use and management of medicaments.
6. Identify the different groups of drugs and health products, the principles of their authorisation, use and symptoms, and the mechanisms of their use.
7. Identify the principles of the use of medication, evaluating the hoped-for benefits and the associated and/or side effects of their administration and consumption.
8. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
9. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.

Content

Theory

Description of the pharmacokinetic and pharmacodynamic principles of each of the pharmacological groups used for the treatment of the most prevalent pathologies, as well as their mechanisms of action and the key points of their use and of safe administration.

Topic 1. Introduction to Clinical Pharmacology: general concepts and bibliography of interest.

Topic 2. Pharmacokinetics: absorption, distribution, biotransformation and elimination of drugs of the organism.

Topic 3. Pharmacodynamics: targeted receptors, agonist and antagonist drugs, mechanisms of action of drugs.

Topic 4. Hypoglycemic drugs and corticoids.

Topic 5. Pharmacology of the Autonomous Nervous System: drugs that act on the sympathetic and parasympathetic system.

Topic 6. Treatment of respiratory diseases:

Topic 7. Pharmacology of the central nervous system

Topic 8 Treatment of digestive diseases

Topic 9 Pharmacovigilance: general concepts and regulations for the notification of adverse reactions.

Topic 10. Treatment of pain

Topic 11. Cardiovascular system drugs: treatment of heart attack, angina pectoris, hypertension and heart failure.

Topic 12. Pharmacological therapies for infectious processes:

Topic 13. Cytostatic drugs: general concepts and regulations for the treatment of cytotoxic residues.

Classroom practices

The theoretical contents are applied to the discussion of topics from the analysis of situations found in the bibliographic search. The work done is presented in front of the group.

Practice 1. Pharmacological anamnesis: simulation of a nurse-patient interview.

Practice 2. Adverse reactions to medication: analysis of cases of notifications of suspicion of adverse reactions.

Practice 3. The role of nursing in clinical trials with medications

Practice 4. Safety in medication administration and dose calculation.

Practice 5.Evaluable proof of dose calculation

Prctice 6: Self-learning and shared pharmacology of sex hormones

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
CLASSROOM PRACTICES (PAUL)	11	0.44	
THEORY (TE)	38	1.52	
Type: Supervised			

TUTORIALS	6	0.24
Type: Autonomous		
ACTIVITIES WITHOUT A TEACHER	10	0.4
SELF-STUDY	80	3.2

1.-Theory lessons in which the contents of the subject will be developed. The goal of the theoretical classes is to explain the fundamental basic concepts.

2.- Classroom practices in which students will have an active participation dealing with predetermined situations and practical cases, through the exchange of partial information, the collective analysis of these information and the subsequent debate, and the exhibition of works in common. The objective of these seminars is to know the most useful sources of information in pharmacology and to relate the theoretical concepts, nursing activity and decision making to give a synthetic response to the situation raised

3.-Moodle: This tool will be used for the repository of documentation and delivery of evaluable activities. The objective is to facilitate the follow-up of the subject, the learning of contents and skills and the continuous evaluation.

4.-Individual tutorials for students who may need them, according to the teacher's criteria or the student's demand.

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
Evaluation through case studies and problem solving	15%	2	0.08	3, 5, 9, 8
Writing Evaluation of Dose medication Problems	10%	1	0.04	2, 3, 7, 5
Written evaluation through objective tests (1st part): multiple choice	37,5%	1	0.04	1, 2, 7, 6
Written evaluation through objective tests (2nd part): multiple choice	37,5%	1	0.04	1, 4, 3, 7, 6

The competences will be evaluated through a final, formative and continuous evaluation. The qualification system will be alphanumeric.

Theory

Written evaluation through objective tests. Written objective tests will release theoretical material and they will be organized in 2 partial exams with multiple answer questions. This evaluation will have a specific weight of 75% of the final grade of the subject.

Classroom practices

Written evaluation of drug dosage calculation problems. It will have a specific weight of 10% of the subject's final grade.

Written evaluation of group discussion and case work projects. Oral defense of group work. It will have a specific weight of 15% of the subject's final grade.

Seminars' attendance: it will be necessary to attend 70% of the seminars to pass the subject. Non-attendance must be justified

In a schematic manner, it will be evaluated as follows:

- Theory

Two test type partial tests: numerical note between 0-10, each one of the tests will represent 37.5% of the final note. The first test will take place during the month of December and the second one once the subject is completed.

Recovery test: written exam "test type" in the case of not having released the subject in both partial exams.

Numeric note between 0-10 (75% of the final grade).

- Classroom practices

Resolution of calculation problems: numeric note between 0-10 (10% of the final mark).

Group work: numeric note between 0-10 (15% of the final mark).

Evaluation criteria:

To pass the subject:

Students must have a score of 5 ormore in each of the 2 partials andascore of 5 or more in the specialized seminars (group work + oral defense) and a score of 5 or more in the written testof dose calculation; or a score of 5 or more on the recovery test (75% of the final grade) and 5 or more on the cases' seminars and dose calculation (25% of the final grade).

To participate in the recovery, students must have previously been evaluated in a set of activities whose weight is equivalent to a minimum of 62% of the total grade of the subject

Definition of NON-EVALUABLE:it will be understood as non-evaluable when:

- the student does not carry out the written objective tests of multiple-choice questions or, if applicable, he does not sit for the recovery test.

- the student does not attend at 30 % of the case seminars without justification

Exam review: Written tests may be reviewed during the period determined for this purpose, once published the final mark. Beyond the established limit, requests for revision will not be accepted.

Treatment of possible individual cases: they will be handled by an evaluation committee.

Single assessment

- There will be a multiple-choice exam or an assessment of theoretical knowledge and knowledge of the practical cases of the PAULs (90%).

- There will be an exam of short questions about the PAUL and with dosage calculation problems (10%).

-The same recovery system will be applied as for the continuous assessment (75% of the final qualification) and a recovery exam of short questions on the PAUL of the cases and dose calculation (25% of the final qualification)

- The review of the final qualification follows the same procedure as for the continuous assessment.

-The criterion of NOT EVALUABLE will be applied to students who do not complete both the theoretical and practical evaluation tests specified by the single evaluation

Bibliography

Nurse specific

Castells S, Hernández M. Farmacología en enfermería. 4ª ed. Barcelona: Elsevier; 2024.

Mosquera JM, Galdós P. Farmacología clínica para enfermería. 4ª ed. Madrid: McGraw-Hill Interamericana; 2005.

Dose calculation

Boyer, Mari Jo. Matemáticas para enfermeras. Guía de bolsillo para el cálculo de dosis y la preparación de medicamentos. 10ª Edición. Ed. Lippincott Williams & Wilkins. 2020.

Harvey M. Cálculo y administración de medicamentos.5a ed. Barcelona: Wolters Kluwer; 2018.

General

James M. Ritter,Rod Flower, Graeme Henderson,Yoon Kong Loke, David MacEwan, Humphrey P.Rang. Rang & Dale´s Pharmacology. Ninth edition. Elsevier Health Sciences; 2020

Flórez J, Armijo JA, Mediavilla A. Farmacología Humana. 6ª edición. Barcelona: Elsevier Masson SA; 2014.
Lüllmann, Mohr, Hein. Farmacología: texto y atlas. 6ªedición. Barcelona: Masson; 2010.

Raffa, Robert B. Netter. Farmacología ilustrada. Barcelona : Elsevier, cop. 2008

Golan DE, Tashjian AH, Armstrong EJ, Armstrong AW. Principios de farmacología. 5ª edició. Barcelona: Lippincott Williams & Wilkins 2017

Diccionari Enciclopèdic de Medicina: https://cit.iec.cat/DEM/default.asp?opcio=1

WEBgrafia

Agència Espanyola del Medicament i Productes Sanitaris (AEMPS):

www.aemps.gob.es/cima

Canal Salut de la Generalitat de Catalunya

http://medicaments.gencat.cat/ca/inici/

Harmonization guidelines

<ahref="https://catsalut.gencat.cat/ca/proveidors-professionals/farmacia-medicaments/programa-harmonitzacio-f

Newsletters

https://catsalut.gencat.cat/ca/proveidors-professionals/farmacia-medicaments/gestio-del-coneixement/butlletins

The Registered Nurses'Association of Ontario (RNAO)

http://rnao.ca/bpg/language?tid=261

Software

NA

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	101	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	102	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	103	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	104	Catalan	first semester	morning-mixed
(PAUL) Classroom practices	105	Catalan	first semester	afternoon
(PAUL) Classroom practices	106	Catalan	first semester	afternoon
(TE) Theory	101	Catalan	first semester	morning-mixed
(TE) Theory	102	Catalan	first semester	morning-mixed
(TE) Theory	103	Catalan	first semester	morning-mixed