

1. OVERVIEW

Subject area	Pharmacology and the Use of Medicines and Medical Devices
Degree	Bachelor's Degree in Nursing
School/Faculty	Biomedical and Health Sciences
Year	Second
ECTS	6 ECTS
Type	Core
Language(s)	Spanish
Delivery Mode	On campus
Semester	Throughout the year (semesters 3 and 4)

2. INTRODUCTION

This subject area aims to provide students with a comprehensive view of different medicines, defining their main routes of administration and the circumstances that may modify their therapeutic response, with special emphasis on drug interactions and the adverse effects of drugs.

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by the acronym in Spanish):

- CB1: Students have shown their knowledge and understanding of a study area that builds on general secondary school education, and are usually at the level where, with the support of more advanced textbooks, they may also demonstrate awareness of the latest developments in their field of study.
- CB3: Students have the ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.

General skills (CG, by the acronym in Spanish):

- CG2: Plan and provide nursing care directed at individuals, families or groups, geared towards effective results for health and assess their impact through clinical care practice guidelines, which describe the processes by which a health problem is diagnosed, treated or cared for.
- CG6: Base nursing interventions on scientific evidence and available resources.
- CG10: Protect the health and well-being of individuals, families or groups that use healthcare services, guaranteeing their safety.

Cross-curricular skills (CT, by the acronym in Spanish):

- CT1: Students will be able to analyse and evaluate aspects of their own professional activity from an ethical point of view, making decisions and assuming the consequences of their own and other people's actions.
- CT4: Apply effective communication strategies in professional practice.

Specific skills (CE, by the acronym in Spanish):

- CUE1: Independently diagnose the necessary nursing care using theoretical and clinical knowledge, in order to plan, organise and manage nursing care when treating patients on the basis of the knowledge and skills acquired, with the aim of improving professional practice.

Learning outcomes (RA, by the acronym in Spanish):

- RA1. Identify the scientific and physiological basis of pharmacology in order to base nursing interventions involving pharmacology on scientific evidence.
- RA2. Describe the different drug groups.
- RA3. Identify the active ingredients in the different drug groups, as well as their most common and/or significant side effects.
- RA4. Recognise the mechanism of action and principles of interaction of the different drug groups.
- RA5. Describe the use of drugs and medical devices in relation to clinical practice and nursing care.
- RA6. Explain the safety principles related to the administration of medicines, assessing the expected benefits, associated risks and the effects of their administration, in order to protect people's health and well-being.

The following table shows how the skills developed in the subject area relate to the intended learning outcomes:

Skills	Learning outcomes
CB1, CB3, CE2	RA1: Identify the scientific and physiological basis of pharmacology in order to base nursing interventions involving pharmacology on scientific evidence.
CB1, CB3, CE2, CE3	RA2: Describe the different drug groups. RA3: Identify the active ingredients in the different drug groups, as well as their most common and/or significant side effects. RA4: Recognise the mechanism of action and principles of interaction of the different drug groups.
CE2, CE4	RA5: Describe the use of drugs and medical devices in relation to clinical practice and nursing care.
CT1, CT4, CE2, CE4	RA6: Explain the safety principles related to the administration of medicines, assessing the expected benefits, associated risks and the effects of their administration, in order to protect people's health and well-being.

4. CONTENTS

The subject area is organised into twelve units: Some of them are then divided into topics:

Unit 1: General Pharmacology and Drug Safety

- 1.1. Pharmacokinetics and pharmacodynamics
- 1.2. Drug-drug interactions and ADR

Unit 2: Pharmacology of the Autonomic Nervous System

- 2.1. Pharmacology of the autonomic nervous system. SNS
- 2.2. Pharmacology of the autonomic nervous system. PNS

Unit 3: Pharmacology of the Cardiovascular System

- 3.1. Antianginal agents, antihypertensives, antiarrhythmics, heart failure
- 3.2. Anticoagulants, antiplatelet agents, fibrinolytics, topical haemostatic agents

Unit 4: Pharmacology of the Respiratory System

- 4.1. Antiasthmatics, cough suppressants, mucolytics, expectorants

Unit 5: Pharmacology of the Digestive System

- 5.1. Anti-ulcer drugs, antiemetics, laxatives
- 5.2. Enteral and parenteral nutrition

Unit 6: Endocrine/Metabolism Pharmacology

- 6.1. Antidiabetics
- 6.2. Contraceptives, other hormones (thyroid)

Unit 7: Medical Devices

- 7.1. Medical Devices

Unit 8: Pharmacology of the Central Nervous System

- 8.1. Benzodiazepines and antidepressants
- 8.2. Antimigraine drugs, antiepileptics, antiparkinsonian, neuroleptic drugs
- 8.3. Antihistamines

Unit 9: Pharmacology of Analgesia

- 9.1. Opioid analgesics
- 9.2. NSAIDs and corticosteroids

Unit 10: Pharmacology of Infectious Disease

- 10.1. Antibacterial and antitubercular drugs
- 10.2. Antivirals, antifungals and antiparasitics

Unit 11: Other Drug Groups

- 11.1. Immunomodulators and vaccines
- 11.2. Cytostatics or antineoplastics
- 11.3. Fluid therapy

Unit 12: Drug Intoxication

- 12.1. Activated charcoal, enemas, antidotes
- 12.2. Drug errors

Unit 13: Drugs Used in Surgery

13.1. Local anaesthetic, general anaesthesia and neuromuscular blockers

5. TEACHING-LEARNING METHODS

The types of teaching-learning methods are as follows:

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- Lecture.
- Case studies
- Problem-based learning

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours
Lectures	31
Asynchronous lectures	10
Case studies	37
Problem-solving	5
Group tutorials	2
Oral presentations	6
Formative assessment (feedback on assessment tests)	5
On-campus knowledge tests	4
Independent working	50
TOTAL	150h

7. ASSESSMENT

The assessment systems, plus their weighting in the final grade for the subject area, are as follows:

On campus:

Assessment system	Weighting
Knowledge tests	60%

Case study/problem: dose calculation	10%
Oral presentation: medical devices	5%
Case study/problem: Medimecum query	5%
Case study/problem: polypharmacy analysis	10%
Case study/problem: drug error analysis	5%
Case study/problem: tablet workshop	5%
Case study/problem: nursing prescription	0

On the Virtual Campus, when you open the subject area, you can check the guide with the details of your assessment activities, including the deadlines and assessment procedure for each.

8. BIBLIOGRAPHY

The recommended bibliography is indicated below:

- Medimecum, guía de terapia farmacológica. Luis F. Villa. 2021. Springer Healthcare
- Administración de medicamentos y cálculo de dosis. A.Zabalegui. Barcelona. Masson SA. 2ª Edición 2014
- El manual Merck: de diagnóstico y tratamiento. Editorial Médica Panamericana 2014. 19ª ed.
- Matemáticas para enfermeras: Guía de bolsillo para el cálculo de dosis y la preparación de medicamentos. Mary J. Boyer y García Roig, Félix. Ed. Wolters Kluwer, 4ª Edición 2016
- Farmacología para enfermeras. Rodríguez Palomares, Consuelo | Garfias Arvizu, Alfonso. 2ª edición. McGraw-Hill Interamericana, 2011
- Las bases farmacológicas de la terapéutica. Goodman-Gilman Editorial Médica Panamericana. 11ª Edición. 2007
- Farmacología clínica para enfermería. J.M. Mosquera y P. Galdós. 4ª Edición. McGraw-Hill. Interamericana.2005

Useful internet links

- Agencia Española de Medicamentos y Productos Sanitarios:
<https://cima.aemps.es/cima/publico/home.html>
- Centro de Farmacovigilancia de la AEMPS:
<https://www.aemps.gob.es/vigilancia/medicamentosUsoHumano/home.htm>
- Acceso on-line a publicaciones farmacológicas: Disponible en: <http://www.imedicinas.com/>
- Información sobre medicamentos del Ministerio de Sanidad, Servicios Sociales e Igualdad:
<http://www.msssi.gob.es/profesionales/farmacia/informaMedicamentos/home.htm>
- Vademécum Internacional. Disponible en: <http://www.vademecum.es/>
- Agencia europea del medicamento. Disponible en: www.emea.europa.eu
- Consejo general de Colegios Oficial de Farmacéuticos. Disponible en: www.portalfarma.com