

Course Unit	Pharmacology in the Elderly		Field of study	Biology and Biochemistry	
Bachelor in	Gerontology		School	School of Health	
Academic Year	2022/2023	Year of study	2	Level	1-2
Type	Semestral	Semester	2	ECTS credits	5.0
Code	9833-346-2202-00-22				
Workload (hours)	135	Contact hours	T -	TP 32	PL -
			TC -	S -	E -
			OT 22	O -	

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Maria Jose Ferreira Gomes Genesio

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Define and understand concepts of the study of medicines.
2. Understand the effects of medicines in the organism and the effects of the organism in medicines.
3. Identify factors that influence the answer of the organism to a certain medicine.
4. Understand the importance of the dosage in medicament therapeutics

### Prerequisites

Before the course unit the learner is expected to be able to:

Understand notions and mechanisms of anatomohistofisiology and biochemistry.

### Course contents

Pharmacology's definition. Historical evolution.  
Basic Concepts on Pharmacology  
Pharmacokinetics  
Pharmacodynamics  
Response variability to drugs  
Medical interactions  
Drug's toxicity  
Research drugs' models  
Division of drugs into therapeutic groups and their study

### Course contents (extended version)

1. Definition of pharmacology; Historical evolution.
2. Basic concepts of pharmacology: Medicine; Pharmacodynamic; Pharmacokinetic, Pharmacogenetic
3. Basic concepts of pharmacology: Rutes of administration; Biological Barrier.
4. Basic concepts of pharmacology: Volume of distribution; Pro-drug; Interaction Pharmacology;
5. Basic concepts of pharmacology: secondary effect; Antagonism; Time of semi-life; Dosage.
6. Pharmacokinetic: Roads of administrat. of medic and special characteristics of them.
7. Absorption: Mechanisms and intervenient factors in transport through biological barriers.
8. Drug distribution in the organism: Volume of distribution; Role of the plasmatic proteins
9. Metabolism: Paper of the liver in the metabolism of medicines. Pro--medicines and precursors;
10. Enzimatic induction and inibition; Interaction of the medicine in the metabolism.
11. Elimination: Roads of elimination of the organism; Interaction of medic. in the excretion of others
12. Pharmacodynamic: Mechanisms of action of the medicine. Agonism, Antagonism and Sinergism.
13. Variability of answer to the medicin: Intrinsic Factors of variation: race, age, sex
14. Variations dependent of dosage. Tolerance and intolerance. Idiosyncrasy
15. Drug interactions and mechanisms; Adverse Reactions ; Incompatibilities
16. Toxicity of the medicine: Hepatotoxicity, Genetic Mutation, Embrionary toxicity, Phototoxicity.
17. Dependence and habituation. Experimental models of study (one compartment and multicompartment).
18. Process of investigation of medicine, Clinical Tests (phase I, II, III, IV).
19. Division of medicine in therapeutic groups. Criteria of division (practical vision).
20. Study of drugs within their pharmacotherapeutic group (special pharmacology)

### Recommended reading

1. Page, Curtis, Sutter, Walter, Hoffman. "Farmacologia integrada" 2ª Edição 2004. Editora Manole.
2. Goodman e Guilman, Alfred. "As bases farmacológicas da terapêutica". 10ª Edição 2003. Mac GrawHill, Brasil.
3. Osswald, W. Garret, J. Guimarães, S. "Terapêutica medicamentosa e suas bases farmacológicas". 3ª Edição 1994, Porto Editora
4. Robert Berkow, Mark H. Beers, Andrew J. Fletcher. "Manual Merck de Saúde para a família". 1ª Edição 2008, Merck Sharp e Dom. Editora Oceano

### Teaching and learning methods

Active methodologies with practical situations

### Assessment methods

1. Two tests during the semester - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 50% (First test)
  - Intermediate Written Test - 50% (Second test)
2. final exam - (Regular, Student Worker) (Final)
  - Final Written Exam - 100% (the mark is the final one)
3. Final exam - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 100% (The mark is the final one)

### Language of instruction

Portuguese, with additional English support for foreign students.

## Electronic validation

Maria Jose Ferreira Gomes Genesio	Hélder Jaime Fernandes	Ana Maria Nunes Português Galvão	Adília Maria Pires da Silva Fernandes
13-04-2023	09-05-2023	21-05-2023	22-05-2023