COURSE DATA

DATA SUBJECT

Code: 34329
Name: Pharmacology
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1208 - Degree in Podiatry	Facultat d'Infermeria i Podologia	2	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1208 - Degree in Podiatry	Pharmacology	BASIC

COORDINATION

ALVAREZ RIBELLES ANGELES

SUMMARY

The objective of this subject is to develop knowledge and the ability to work and communicate in the field of pharmacological therapeutics. It will include aspects related to understanding the different methods of drug administration in humans, the parameters used to study the temporal evolution of a drug within the body, the study of drug mechanisms of action and pharmacological interactions, as well as the interpretation of the most representative pharmacological effects.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

COMPETENCES / LEARNING OUTCOMES

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Know and apply the principles of pharmacokinetics and pharmacodynamics. Pharmacological action, effects, adverse reactions and interactions. Description of the different pharmacological groups. Commonly used medicines; indications and contraindications. Drug design and development. Recipes. Toxicity studies. Routes of medication administration. Natural products for therapeutic use whose safety and efficacy have been proven according to the scientific evidence available.

DESCRIPTION OF CONTENTS

1.GENERAL PHARMACOLOGY

1.Pharmacology: Basic concepts and its relation to podiatry.

2.Pharmacokinetic Processes I: Mechanisms of drug transport across membranes. Temporal evolution of a drug in the body.

3.Pharmacokinetic Processes II: LADME (Liberation, Absorption, Distribution, Metabolism, and Excretion). Liberation process. Absorption process. Bioavailability. Routes of drug administration. Topical administration.

4.Pharmacokinetic Processes III: Distribution process.

5.Pharmacokinetic Processes IV: Biotransformation and drug excretion.

6.Situations that modify drug response: physiological and pathological conditions. Administration and use of medications in pediatrics, the elderly, and during pregnancy.

7.Mechanism of drug action: Pharmacological receptors. Drug¿receptor interaction.

8.Pharmacological interactions.

9.Adverse drug reactions.

2.CELLULAR MEDIATORS

10.General concepts on cellular mediators. Eicosanoids. Nitric oxide.

11.Histamine and antihistamines.

3.PHARMACOLOGY OF PAIN AND INFLAMMATION

12.Opioid analgesic drugs

13.Non-steroidal anti-inflammatory drugs (NSAIDs), antipyretics, and analgesics. Antirheumatic drugs

14.Steroidal anti-inflammatory drugs: corticosteroids

15.Antigout and hypouricemic drugs

4.PHARMACOLOGY OF THE AUTONOMIC AND PERIPHERAL NERVOUS SYSTEM

16.Anatomical and physiological basis of the autonomic nervous system

17.Pharmacology of the adrenergic system I

18.Pharmacology of the cholinergic system

19.Local and general anesthetics

5.CENTRAL NERVOUS SYSTEM PHARMACOLOGY

20.Central neurotransmission. Classification of psychotropic drugs

21.Psychotropic drugs

6.CARDIOVASCULAR PHARMACOLOGY. BLOOD.

22.Antihypertensives. Diuretics

23.Cardiotonic drugs. Antianginal agents

24.Pharmacology of coagulation

7.HORMONES. METABOLISM. VITAMINS.

25.Insulin and oral hypoglycemic agents

26.Pharmacology of phospho-calcium metabolism

27.Hypolipidemic agents

28.Vitamins

8. PHARMACOLOGY OF THE DIGESTIVE SYSTEM

29. Antiulcer drugs

9. CHEMOTHERAPY

30. General principles in the treatment of infectious diseases

31. Antiseptics and disinfectants

32. Beta-lactam antibiotics

33. Macrolides, Quinolones

34. Antifungal drugs

10. LOCAL THERAPY

35. Pharmacological groups of interest in local treatment

11. SEMINARS

Study of drug¿receptor interaction

Drug development. Clinical trials and pharmacovigilance

Pharmaceutical dosage forms

Prescription: characteristics and completion

Sources of information

12. LABORATORY

6. Volume of distribution, plasma levels, and dosage regimens

13. COMPUTER WORK

7. Study of drugs modulating cardiovascular function

8. Study of drugs modulating inflammation

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	2,00
Theory	42,00
Laboratory	2,00
Computer classroom practice	4,00
Classroom practices	10,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

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

TEACHING METHODOLOGY

1) Face-to-face learning activities: These represent 40% of the total workload, equivalent to 60 hours. This workload is distributed as follows:

A) Theoretical classes: Represent 70% of the time and amount to 42 hours. These are dedicated to presenting the concepts and analytical procedures related to the study of the subject, through expository teaching methods.

B) Practical classes: Represent 30% of the time and amount to 18 hours.

In the laboratory practice, students graphically represent the evolution of plasma drug levels following a specific dosage regimen.

In the computer-based practices, using simulation software, students solve practical cases to reinforce knowledge of cardiovascular and inflammatory pharmacology. Students work individually, under the supervision of the instructor. Time dedicated to tutoring is included in this section.

2) Non-presential learning activities:

This corresponds to the student's independent work and represents 60% of the total workload, equivalent to 90 hours. This workload is distributed as follows:

A) Study:

Represents 53% of the time. It includes critical reading of the recommended bibliography, additional literature research, actual study and preparation for continuous assessment tests and the final exam; preparation for seminars and practical assignments.

B) Exam:

The remaining 7% of the time will be dedicated to the preparation and completion of the assessment test.

EVALUATION

Student Learning Assessment

Student learning will be assessed based on the following elements, taking into account that theoretical and practical components must be passed independently.

a) Theory:

A series of short questions and essay topics will be proposed to evaluate this section. This component will constitute 70% of the final grade.

b) Practice:

A final test will be conducted to assess the skills and competencies acquired. The result will account for 30% of the final grade.

If either part (theory or practice) is not passed, the grade recorded will be that of the failed part. If both parts are failed, then the higher of the two failing grades will be recorded.

In case the practical part is failed, it may be recovered during the second exam session by passing a test involving problems and questions related to the practical sessions.

REFERENCES

Basic Bibliography

- Flórez J. (2014). Farmacología Humana. Madrid: Elsevier S.L. 6ª edición.

- Rang HP, Dale M.M y Ritter JM. (2012). Farmacología. Madrid: Hartcout. Churchill Livingstone. 7ª edición

Supplementary Bibliography

- Lorenzo P, Moreno A, Leza JC, Lizasoain I, Moro MA (2014). Velázquez. Farmacología básica y clínica. Madrid: Médica Panamericana. 19ª edición

- Goodman & Gilman et al. (2011). Las bases farmacológicas de la terapéutica. Madrid: McGraw-Hill. 12ª edición.

- Katzung B, Trevor AJ, Masters SB. (2010). Farmacología Básica y Clínica. Madrid: McGraw- Hill. 11ª Edición.