

26333 - Pharmacology for Physical Activity and Sport

Syllabus Information

Academic year: 2024/25

Subject: 26333 - Pharmacology for Physical Activity and Sport

Faculty / School: 229 - Facultad de Ciencias de la Salud y del Deporte

Degree: 295 - Degree in Physical Activity and Sports Science

ECTS: 6.0

Year:

Semester: Second semester

Subject type: Optional

Module:

1. General information

OBJECTIVES

The subject has the following approaches and objectives:

- 1) To know the transit of the drug through the organism and its pharmacodynamic behaviour
- 2) To provide the necessary knowledge to understand the scientific basis of the actions and effects of the different pharmacological groups in physical exercise
- 3) To know the adverse reactions and interactions that derive from the use of the drugs, assessing the patient's special situations and the influence of sports practice
- 4) To become aware of the importance of prevention against the use of drugs of abuse and doping and the harm they cause to health

Objectives aligned with the following Sustainable Development Goals (SDGs): Health and wellness, Quality education.

CONTEXT

Students should know the general principles of pharmacology that allow them to understand and evaluate the different pharmacological groups used, with repercussions in physical exercise. It involves training in the prevention against doping and drug abuse, getting involved in the health education of athletes with whom they will perform their future professional work.

2. Learning results

- Describe the transit of the drug through the body and its mechanism of action
- Interpret the relevance of adverse drug reactions (ADRs) and changes in drug response secondary to drug associations
- Coherently relate the sequence drugs-frequent pathologies-physical exercise and to describe the specific pharmacological groups that can modify sports performance
- Adequate assessment of the pharmacological information circulating in relation to physical exercise (doping substances, drugs of abuse,), the problem of self-medication and the benefit-risk ratio in order to achieve a rational use of medicines

3. Syllabus

THEORY: 35 classroom hours and 65 non-classroom hours

- Concept of pharmacology.
- LADME: Study of drug transit through the body from the pharmacokinetic point of view
- Mechanism of action of drugs: Pharmacodynamics
- Pharmacological interactions
- ADR Adverse drug reactions. Pharmacovigilance

- Pharmacology of VNS and Peripheral Nervous System
- Psychostimulant drugs
- Beta-blocker drugs
- Central Nervous System Depressant Drugs
- Pharmacological basis of pain and inflammation: NSAIDs, Opioids and glucocorticoids
- Anabolic androgenic anabolic steroids
- Growth Hormone, right, IGF-1
- Blood doping
- Erythropoietin. Epoetins
- Maskers
- Type I and type II diabetes
- Exercise-induced asthma
- Deficiency anaemias
- Arterial hypertension

PRACTICES: 25 classroom hours and 25 non-classroom hours

- Laboratory: Dosage forms and routes of administration
- Seminars
- Doping control. Protocol and regulations
- Computer Simulator: VNS, Dose-response curves
- Problem-Based Learning
- Clinical cases
- Bibliographic searches. Teamwork and presentation

4. Academic activities

Subject of 6 ECTS:

MASTER CLASS

PRACTICAL CLASSES

Laboratory

Seminars

Problem-based learning

Doping control: protocol and regulations

Pharma tutor: computer simulation

Clinical cases

Group work

5. Assessment system

Continuous Assessment:

Evaluation of the theoretical part: Individual written test (multiple choice or short answer):60% of the final grade. The exam can be replaced by an evaluation at the end of each topic based on questions we ask in class.

Evaluation of the practical part: Portfolio, Individual and small group work (40% of final grade)

Each of the parts must be passed separately with a minimum of 5 points

Global Evaluation: Students who have not passed the continuous evaluation or students who wish to use the global evaluation model because they are unable to attend classes/practices. Those who opt for the global evaluation , must take a test consisting of: Individual written test (multiple choice or short answer). The test will be taken in person or online (ADD questionnaire activity)

and will represent 60% of the final grade . Completion and presentation of an individual work: 40% of the final grade

GRADING SYSTEM: according to art. 5.2 of Royal Decree 1125/2003 of September 5 (BOE September 18, 2003): From 0 to 4.9: Fail (S); 5.0 to 6.9: Pass (A); 7.0 to 8.9: Notable (N); from 9.0 to 10: Outstanding (SB). Honours: grade equal to or higher than 9.0.

Fraud or total or partial plagiarism in any of the evaluation tests will result in the failure of the subject with the minimum grade, in addition to the disciplinary sanctions that the guarantee committee adopts for these cases. For a more detailed understanding of plagiarism and its consequences, please consult following link :<https://biblioteca.unizar.es/propiedad-intelectual/propiedad-intelectual-plagio#Que>

6. Sustainable Development Goals

- 3 - Good Health & Well-Being
- 4 - Quality Education