

## 26333 - Pharmacology for Physical Activity and Sport

### Información del Plan Docente

Academic Year	2017/18
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**

#### **1.1.Introduction**

#### **1.2.Recommendations to take this course**

#### **1.3.Context and importance of this course in the degree**

#### **1.4.Activities and key dates**

### **2.Learning goals**

#### **2.1.Learning goals**

#### **2.2.Importance of learning goals**

### **3.Aims of the course and competences**

#### **3.1.Aims of the course**

#### **3.2.Competences**

### **4.Assessment (1st and 2nd call)**

#### **4.1.Assessment tasks (description of tasks, marking system and assessment criteria)**

### **5.Methodology, learning tasks, syllabus and resources**

#### **5.1.Methodological overview**

The subject aims to be a correspondence between the theoretical sessions and the practice sessions, so that these practice sessions to reinforce and support the contents of the subject, to achieve meaningful learning of the student that you can use in the exercise of their future professional work .

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The theoretical sessions will take place through interactive lecture, explanatory or demonstrative content sessions, using the blackboard and audiovisual material with computer support.

The practice sessions will be made by:

- Discussion of seminars taught by the teacher. Active participation of the student
- Doping control. Protocol and regulation
- Pharmatutor: Computer simulation:
- Problem-based learning (PBL1, PBL2 and PBL3)
- Asthenia: clinic cases
- Course portfolio: collected reports relating to the control of the previous practice activities (individual work)
- Realization of a monographic review work, in small groups, on a suggested topic. Presentation and defense. During the realization of the same, corresponding teachers will have various interviews with the working groups for academic orientation and supervision.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials. (<http://www.unizar.es/dvirtual.htm>)

### 5.2.Learning tasks

Subjects (6 ECTS)

Lecture

Practice Session:

- . seminars
- . problem-based learning.
- . Doping control. Protocol and regulation

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- . Pharmatutor: Computer simulation
- . clinic cases
- . group work and presentation

### 5.3.Syllabus

The course will address the following topics.

#### THEORETICAL SESSIONS

##### GENERAL PRINCIPLES OF PHARMACOLOGY

**Topic 1.** Concept of Pharmacology. Definition and contents. Division of Pharmacology.

**Topic 2.** ADME: Pharmacokinetics

**Topic 3.** Pharmacodynamics

**Topic 4.** Drug Interactions

**Topic 5.** Adverse drug reactions (ADR). Pharmacovigilance

##### SPECIFIC THERAPEUTIC DRUGS AND PHYSICAL EXERCISE

**Topic 5:** Drugs acting on Autonomic Nervous System and Peripheral Nervous System

**Topic 6:** Psychostimulant drugs

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**Topic 7:** Beta blockers drugs

**Topic 8:** Central Nervous System depressants drug

**Topic 9:** Pharmacological basis for the pain and inflammation

**Topic 10:** Nonsteroidal anti-inflammatory drugs (NSAIDs)

**Topic 11:** Opioid analgesics

**Topic 12:** Steroids antiinflammatory drugs (Corticosteroids)

**Topic 13:** Anabolic androgenic steroids

**Topic 14:** Growth hormone, rhGH, IGF-1

**Topic 15:** Blood doping

**Topic 16:** Erythropoietin. Epoetins

**Topic 17:** Masking agents

ANALYSIS OF INFLUENCE OF EXERCISE ON TREATMENT OF CHRONIC DISEASES.

**Topic 18:** Diabetes Mellitus type I and type II

**Topic 19:** Asthma. Exercise-induce asthma

**Topic 20:** Anemia: iron deficiency anemia, vitamin B12 and folic acid deficiency anemia.

**Topic 21:** Arterial Hypertension

PRACTICE SESSIONS

- Seminars:

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- . Pharmaceutical forms and route of drug administration
- . New drug development. Clinical trial
- Doping control. Protocol and regulation
- Dietary supplements
- Computer simulation: Autonomic Nervous System: Dose-response curves. Agonist and antagonist drug (competitive or non-competitive). Neuromuscular blocking drugs
- Problem-based learning (PBL1, PBL2 and PBL3)
- Asthenia: clinic cases
- References research. Online Pharmacology directions
- Group work and presentation.

### 5.4.Course planning and calendar

**Calendar of sessions and presentations will take place during the semester designated by the Centre .**

Theoretical sessions (35 hours face to face sessions and 25 hours off-site)

Practice sessions (25 hours face to face sessions and 25 hours off-site)

Week number 1. Without practice

Week number 2: Pharmaceutical forms and route of drug administration

Week number 3: New drug development. Clinical trial

Week number 4: Doping control. Protocol

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Week number 5: Doping control. Regulation

Week number 6: Pharmatutor. Computer simulation I

Week number 7: Pharmatutor. Computer simulation II

Week number 8 and 9: - Problem-bases learning (PBL1)

Week number 10 and 11: - Problem-bases learning (PBL2)

Week number 12 and 13: - Problem-bases learning (PBL3) .

Week number 14: Asthenia: clinic cases

Week number 15: Dietary supplements

Week number 16 and 17: Group work and presentation.

### **5.5.Bibliography and recommended resources**