

## 26716 - Diagnostic and Therapeutic Procedures: Pharmacology and Dietetic I

### Información del Plan Docente

Academic Year	2016/17
Academic center	104 - Facultad de Medicina
Degree	304 - Degree in Medicine
ECTS	6.0
Course	3
Period	First semester
Subject Type	Compulsory
Module	---

### 1. Basic info

#### 1.1. Recommendations to take this course

#### 1.2. Activities and key dates for the course

For students enrolled in the subject, places, times and dates of lectures and practical sessions will be public via Bulletin Board advertisements of the grade on the platform Moodle at the University of Zaragoza, <https://moodle2.unizar.es/add/>, and in the moodle page for the course. These routes will be also used to communicate enrolled students their distribution by groups of practical sessions, which will be organized by the coordination of degree.

### 2. Initiation

#### 2.1. Learning outcomes that define the subject

#### 2.2. Introduction

#### 3. Context and competences

##### 3.1. Goals

##### 3.2. Context and meaning of the subject in the degree

##### 3.3. Competences

##### 3.4. Importance of learning outcomes

### 4. Evaluation

### 5. Activities and resources

#### 5.1. General methodological presentation

The learning process designed to this subject is based in:

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The subject shows the basic knowledge in pharmacology so that the activities proposed are focused on the understanding and assimilation of the mainstays of the Pharmacology as well as in the useful of the drugs which is essential for the future development of the medical professionals.

La general vision of the knowledge obtained in the theoretical class is completed with the practical activities, where the student got used to the different methods and their application in medicine.

The students can use the tutorial hours to get a better following of the learning process. These hours can be directed to the conventional tutoring session or to specific session related with the practical work.

The basic material of the course, such as the subject program, the summaries of the theoretical themes, the complementary material to the practical class and the schedule, will be uploaded to the website. The web page is <http://www.unizar.es/dvirtual.htm> (Anillo Digital Docente).

The subject is structured as follows:

Classroom-based activities are developed through 32 participatory classes and involve big group of students. The practical classes and/ or seminars consist of 20 class hours divided into working sessions of two hours and a half each. In this case the students will be distributed in small groups.

### **5.2.Learning activities**

With the aim of getting the expected learning results the program offered to the student include the next activities:

Theory classes on big groups (1,28 ECTs)

Self-study explanation and orientation of the subject contents directed to acquire the competences and learning results. All available resources about audiovisual support will be used.

Practical classes in small groups (0,72 ECTS)

Each group of students will receive practical classes for two weeks.

Student's autonomous work (3,64 ECTS)

All students will be informed about the risk associated with some practical classes, such as the use of dangerous products and they also will be advised on the procedures to be followed in case of accident. Every student must sign a commitment to comply with the work rules and safety standards in order to carry out the practical classes. More

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information in <http://uprl.unizar.es/estudiantes.html>

### 5.3.Program

#### Theoretical program

##### General Principles of Pharmacology

- **Pharmacology concepts** : Active pharmaceutical ingredient. Drug life cycle research
- **Pharmacokinetics** : Drug passage across the membrane. Drug absorption. Routes of administration. Drug distribution. Drugs binding to proteins. Blood-brain barrier and placental barrier Drug metabolism and excretion
- **Pharmacodynamics** : Mechanism of drug actions. Pharmacological actions. Drug receptor concept and types. Dose-response curves. Drug-receptor interaction. Pharmacological interactions
- **Side effects**
- **Pharmacogenetics**

##### Pharmacology of Systems

- Pharmacology of Autonomic Nervous System
- Pharmacology of mediators of Inflammation and Pain
- Pharmacology and the Immune System
- Chemotherapeutic Agents
- Pharmacology of Blood Disorders
- Pharmacology of Central Nervous System
- Antibiotics. Antiviral and Antifungal agents

##### Practical Classroom teaching with small groups (2ECTS)

Each group practical classroom teaching will take place during two weeks

##### Module 1

1. Workshop: Route of drug administration and pharmaceutical forms (2,5 hours)
2. Pharmacokinetics: practical exercises (5 hours)
3. Pharmacodynamics: Dose-response curves. Agonist and antagonist drugs (2,5 hours)

##### Module 2

1. Problem-based learning. Two sessions (5 hours)
2. Pharmacology in Emergency. Exercises of simulation. (Role-playing exercises) (3 hours)
3. Seminars (2 hours)

### 5.4.Planning and scheduling

**Theoretical class** in big group: three hours each week

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Theoretical class will be carried on Tuesday, Wednesday and Thursday

Group 1: from 10:00 until 11:00 hours

Group 2: from 9:00 until 10:00 hours

**Practical class** in small groups of students: 10 hours each week and two weeks each group

Timetable: from 11.30 until 15:00 hours during the days of the week.

Every group of students will develop the same training activities in theory as well as practice.

### 5.5. Bibliography and recommended resources

- Las bases farmacológicas de la terapéutica / [editor, Laurence L. Brunton ; editores asociados, John S. Lazo, Keith L. Parker] ; traducción, José Rafael Blengio Pinto, Jorge Orizaga Samperio, Ana María Pérez-Tamayo Ruiz . 11ª ed. México D.F. [etc.] : McGraw-Hill Interamericana, cop. 2007
- Lorenzo Velázquez, Benigno. Farmacología básica y clínica / Velázquez ; [colaboradores], P. Lorenzo ... [et al.]. 18ª ed. Madrid [etc.] : Editorial Médica Panamericana, 2008
- Farmacología / H.P. Rang ... [et al.] . 6ª ed. Madrid [etc.] : Elsevier, D.L. 2008
- Farmacología fundamental / autores, Alfonso Velasco Martín ... [et al.] . 1ª ed. en español, [reimp.] Madrid [etc.]: McGraw-Hill Interamericana, D.L. 2004
- Farmacología humana / director, Jesús Flórez ; directores asociados, Juan Antonio Armijo, África Mediavilla . 5ª ed. Barcelona [etc.] : Masson, 2008
- Integrated pharmacology / Clive Page ... [et al.] . 2nd.ed. Edinburgh [etc.]: Mosby, 2004