

29319 - Pharmacology

Syllabus Information

Academic Year: 2021/22

Subject: 29319 - Pharmacology

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

Degree: 442 - Degree in Odontology

ECTS: 6.0

Year: 2

Semester: Second semester

Subject Type: Basic Education

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as theory and practice sessions, autonomous work and study.

4.2. Learning tasks

This 6 ECTS course is organized as follows:

- **Theory sessions.**
- **Practice sessions.** Include:
 - workshop: Route of drug administration and pharmaceutical forms
 - seminar: Discussion of seminars taught by the teacher.
 - active participation of the student problem?based learning. Resolution and discussion
 - Pharmatutor: computer lab session laboratory session group work and presentation
 - laboratory session: preparation of master drug formulations
- **Course portfolio:** collected reports relating to the control of the previous practice activities (individual work)
- **Assignments.** Realization of 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.

4.3. Syllabus

This course will address the following topics:

Theory Sessions

GENERAL PRINCIPLES OF PHARMACOLOGY

- **Topic 1.** Concept of Pharmacology. Definition and contents. Division of Pharmacology.
- **Topic 2.** Drug Absorption. Routes of drug administration.
- **Topic 3.** Drug Distribución.
- **Topic 4.** Elimination: Drug Metabolism. Drug Excretion.
- **Topic 5.** Pharmacodynamics.
- **Topic 6.** Drug Interactions. Interactions of interest in dentistry
- **Topic 7.** Adverse drug reactions (ADR). Oral side effects of medications. Pharmacovigilance.

DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM AND PERIPHERAL NERVOUS SYSTEM

- **Topic 8.** Cholinergic Transmission. Cholinergic agents (Parasympathomimetics)
- **Topic 9.** Anticholinergic agents (Antimuscarinic agents). Neuromuscular blocking drugs
- **Topic 10.** Adrenergic Transmission. Adrenergic Drugs (Sympathomimetics)
- **Topic 11.** Adrenergic-receptor antagonists block the effects of sympathetic stimulation: Alpha blocker and Beta blockers

PHARMACOLOGY OF PAIN, INFLAMMATION, IMMUNITY AND ANESTHESIA

- **Topic 12.** Histamine and Antihistamines
- **Topic 13.** Nonsteroidal anti-inflammatory drugs
- **Topic 14.** Steroids antiinflammatory drugs (Corticosteroids)
- **Topic 15.** Opioid analgesics
- **Topic 16.** Local anesthetics. Basis of general anesthesia in dentistry.

CENTRAL NEUROPHARMACOLOGY

- **Topic 17.** Drugs used for the treatment of anxiety and sleep disorders
- **Topic 18.** Drugs used for the treatment of affective disorders

DRUGS AFFECTING BLOOD

- **Topic 19.** Drugs affecting hemostasis. Key Points for Dentists

CARDIOVASCULAR PHARMACOLOGY

- **Chapter 20.** Anti-ischemic drugs; drugs used in the management of heart failure: arterial hypertension. Dental repercussion.

PHARMACOLOGY OF HORMONES

- **Topic 21:** Insulin, glucagon and oral antidiabetic agents. Key Points for Dentists
- **Topic 22.** Thyroid hormones and antithyroid drugs. Parathyroid Hormone. Calcium. Vitamin D. Calcitonin.

CHEMOTHERAPEUTIC DRUGS

- **Topic 23.** Principles of antimicrobial chemotherapy
- **Topic 24.** Beta-lactam antibiotics. Beta-lactamase inhibitors
- **Topic 25.** Aminoglycosides
- **Topic 26.** Macrolides. Ketolides, Lincosamide, Tetracyclines. Chloramphenicol. Other Antibacterial agents
- **Topic 27.** Antitubercular agents.
- **Topic 28.** Antifungal agents
- **Topic 29.** Antiviral agents

Practice Sessions

- Workshop: Route of drug administration and pharmaceutical forms
- Seminar: Adverse drug reactions (ADR)
- 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)
- Laboratory

- Group work and presentation

4.4. Course planning and calendar

Calendar of sessions and presentations will take place during the 4th semester of the degree.

The theoretical sessions will take place through the lectures according to the program presented according to the schedule assigned to the beginning of the course.

The practice sessions includes: seminar (first week); Workshop (second and third week); Pharmatutor: computer lab session (fourth and fifth week), Problem-based learning (sixth to eleven week); Laboratory (twelve to fourteen week); Exposition and defence of monographic works made by students in small groups (fifteen to sixteen week).

Exams on dates designated by the Centre (June and September)

Students who choose continuous assessment:

Continuous assessment of the following practice sessions:

- 1) Computer simulation: after realizing the exercise in small groups, the students will deliver an analysis of dose-response curves and autonomic nervous system
- 2) Problem-based learning (PBL): the student will make a report analyzing the case from the pharmacological point of view.
- 3) Laboratory sessions: The student will fill out a summary of product characteristics carried out in the laboratory
- 4) Group work and presentation. realization of a monographic review work, in small groups, on a suggested topic. Presentation and defense

Students who do not choose continuous assessment:

Overall evaluation that will realize in the official date (web of the Center)

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Health and Sports Sciences website (<http://fccsyd.unizar.es/>) and Moodle (<https://moodle.unizar.es/add/>).

4.5. Bibliography and recommended resources

To consult the bibliography and recommended resources, you must access the *Recommended Bibliography* link.