

**COURSE DATA****Data Subject**

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| Code | 34712 |
| Name | Pharmacology, anaesthesia and resuscitation |
| Cycle | Grade |
| ECTS Credits | 9.0 |
| Academic year | 2023 - 2024 |

Study (s)

| Degree | Center | Acad. Period | year |
|----------------------------|------------------------------------|---------------------|-------------|
| 1206 - Degree in Dentistry | Faculty of Medicine and Odontology | 2 | Annual |

Subject-matter

| Degree | Subject-matter | Character |
|----------------------------|--|------------------|
| 1206 - Degree in Dentistry | 15 - Pharmacology, anaesthesia and reanimation | Obligatory |

Coordination

| Name | Department |
|--------------------------------|--------------------|
| MARTINEZ CUESTA, MARIA ANGELES | 135 - Pharmacology |

SUMMARY

Students enrolled in **Basic Pharmacology** are expected to learn and understand the general principles of pharmacology; the pharmacokinetic phases that make it possible for a chemical molecule (drug) to reach a bio phase in an adequate concentration so that, once there, it can interact with another molecule (receptor) through pharmacodynamic mechanisms to obtain the desired pharmacologic effect, and often other non-desired ones as ADR.

Besides, Basic Pharmacology includes the Study of the pharmacologic groups that had been classified onto the following categories according to their repercussion or usage within the odontologic practice:

1. Drugs used or prescribed by the dentist.
2. Drugs prescribed to the patient by the physician for his or her specific pathology, but that also influence directly on the dental treatment.



3. Drugs commonly prescribed to the patient by the physician for its specific pathology and that can cause mouth reactions or interact in an adverse way with the drugs prescribed by the dentist.

4. Abuse drugs

Pharmacologic groups included in the categories number 1 and 2 must be studied in detail. Their study should include the observation of their action mechanism, pharmacokinetics and pharmacologic effects. As a counterpart for this, the emphasis put into the study of categories 3 and 4 must correspond to those actions and attributes that directly influence the dentist's practice.

Students enrolled in **Clinical Pharmacology** are expected to be capable of making a rational use of the drugs commonly prescribed by the dentist.

Anesthesia and resuscitation pretends that students become aware of a matter that will accompany them throughout their careers. As reference to: - The pre-anesthetic assessment. - Local and general anesthesia with its indications and complications. - How to treat postoperative pain.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Se recomienda que para poder conseguir las competencias de la Farmacología Básica, los alumnos hayan superado las asignaturas de carácter básico de la rama de Ciencias de la Salud en especial la bioquímica, biología y fisiología humana.

Se recomienda que para poder conseguir las competencias generales y específicas de Farmacología clínica los alumnos hayan superado la Farmacología básica y deberían conocer y entender los aspectos científicos más relevantes de las asignaturas del Bloque III (Patología)

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1206 - Degree in Dentistry

- Promover el aprendizaje de manera autónoma de nuevos conocimientos y técnicas, así como la motivación por la calidad.
- Comprender las ciencias biomédicas básicas en las que se fundamenta la Odontología para asegurar una correcta asistencia buco-dentaria.
- Comprender los fundamentos de acción, indicaciones y eficacia de los fármacos y otras intervenciones terapéuticas, conociendo sus contraindicaciones, interacciones, efectos sistémicos e interacciones sobre otros órganos, basándose en la evidencia científica disponible.



- Conocer, valorar críticamente y saber utilizar las fuentes de información clínica y biomédica para obtener, organizar, interpretar y comunicar la información científica y sanitaria.
- Conocer del método científico y tener capacidad crítica para valorar los conocimientos establecidos y la información novedosa. Ser capaz de formular hipótesis, recolectar y valorar de forma crítica la información para la resolución de problemas, siguiendo el método científico.
- Conocer los procesos generales de enfermar, curar y reparar, entre los que se incluyen la infección, la inflamación, la hemorragia y la coagulación, la cicatrización, los traumatismos y las alteraciones del sistema inmune, la degeneración, la neoplasia, las alteraciones metabólicas y los desordenes genéticos.
- Conocer la farmacología general y clínica en la práctica odontológica.
- Conocer las ciencias biomédicas en las que se fundamenta la Odontología para asegurar una correcta asistencia buco-dentaria. Entre estas ciencias deben incluirse contenidos apropiados de:
??Embriología, anatomía, histología y fisiología del cuerpo humano.
??Genética, Bioquímica, Biología celular y molecular
??Microbiología e inmunología
- Conocer el método científico y tener capacidad crítica para valorar los conocimientos establecidos y la información novedosa.
- Conocer los procesos generales de enfermar, curar y reparar, entre los que se incluyen la infección, la inflamación, la hemorragia y la coagulación, la cicatrización, los traumatismos y las alteraciones del sistema inmune, la degeneración, la neoplasia, las alteraciones metabólicas y los desordenes genéticos.
- Conocer la farmacología general y clínica en la práctica odontológica.
- Conocer las bases farmacológicas de las distintas técnicas anestésicas tanto locales como generales, así como el papel de la sedación y la anestesia general en el manejo del paciente odontológico.
- Prescripción apropiada de fármacos, conociendo sus contraindicaciones, interacciones, efectos sistémicos y repercusiones sobre otros órganos.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

Basic Pharmacology's aim is to provide the students with the fundamental knowledge about Pharmacokinetics and mainly on the drugs mechanism of action, as the basics to understand and read the facts that will be subsequently laid out in Clinical Pharmacology.

Concerning **Clinical Pharmacology** , students are expected to end this course having successfully met requirements such as:

Being able to achieve the most adequate prescription for the patient both from a formal point of view and based on the best evidence.



Being able to examine, evaluate and diagnose a pharmacologic interaction.

Being able to suspect, evaluate and diagnose an adverse reaction to a drug.

Being able to take the necessary precautions to avoid, correct, treat or minimize the adverse consequences of a pharmacologic interaction or drugs adverse reaction

Anesthesia's aim is to acquire the knowledge and skill of the various techniques used in dentistry as well as identify and resolve any complications that might arise from them

WORKLOAD

| ACTIVITY | Hours | % To be attended |
|--|---------------|------------------|
| Theory classes | 50,00 | 100 |
| Classroom practices | 25,00 | 100 |
| Laboratory practices | 15,00 | 100 |
| Development of group work | 18,00 | 0 |
| Development of individual work | 9,00 | 0 |
| Study and independent work | 44,00 | 0 |
| Readings supplementary material | 10,00 | 0 |
| Preparation of evaluation activities | 22,00 | 0 |
| Preparation of practical classes and problem | 32,00 | 0 |
| TOTAL | 225,00 | |

TEACHING METHODOLOGY

BÁSIC PHARMACOLOGY

The course is set out on theoretical and practical classes. Within the practical classes, seminars and laboratory practices will be included. Seminars will be composed by a group of 40 students and laboratory practices will be composed by 15.

The part of the course that will verse on general principles (module A) will be composed by theoretical classes (8 hs. Maximum) and practical classes (5 practices.)

The part of the course that will verse on drugs in the categories 1 and 2 (Module B) will be composed by theoretical classes (10 hs. Maximum).

The part of the course that verses on drugs in the categories 3 and 4 (module C) will consist on the elaboration of seminars on each pharmacologic group (5-8 seminars).



It is suggested that the teacher provides the students with reference files (index) on the pharmacologic groups seen in this module C, in order to help them prepare the seminar. The aim is that the seminar provides the basic information on pharmacology (action mechanism and derivative actions) together with the possible relevancies in odontology: ADR, interaction, etc. In addition to this, a question pool will be made and all the students will have to be familiar with it after assisting to the seminars.

The methodology and hours allocated to each part of the programme may slightly vary throughout the course according to students' requirements and evolution of this new methodology. However, the total amount of global, practical and theoretical hours established by the new curriculum will be fully completed.

CLINICAL PHARMACOLOGY

In **Clinical Pharmacology** students are expected to learn how to make a rational usage of the drugs usually prescribed by the dentist. For this purpose, the following activities are planned:

- A) Traditional theoretical classes to develop the contents corresponding to General clinical Pharmacology.
- B) Problem solving in order to learn how to select the most accurate drugs in the treatment of syndromes and symptoms of frequent appearance in odontology according to efficiency, safety and patient's peculiarities criteria.

Seminars in order to elaborate a guide on frequently used therapeutic drugs

ANESTHESIA AND REANIMATION

In this matter ten traditional lectures and eight practical classes are proposed. During the practical classes seminars for all the students will take place.

EVALUATION

English version is not available



REFERENCES

Basic

- Tripathi KD. Farmacológicas en odontología. Fundamentos. Panamericana Buenos Aires 2008
- Baños JE, Farré M. Principios de Farmacología Clínica. Barcelona. Masson. 2002
- Yagiela JA, Neidle SA, Dowd FJ. Pharmacology and therapeutics for dentistry. 6ª ed. Mosby. St Louis 2011
- Wilton Levine. Procedimientos en anestesia del Massachussts general hospital. 8ª ed. 2013
- Espinosa Meléndez MT. Farmacología y Terapéutica en Odontología. Panamericana. 2012.
- Velazquez. Manual de farmacología básica y Clínica. Panamericana. 2013
- Katzung. Farmacología básica y clínica. Lange, McGraw Hill. 2009

Additional

- Florez J. Armijo JA, Medaivilla A. Farmacología Humana. 5ª ed. Elsevier España, S.L. Barcelona 2008.
- Requa Clark B. Applied Pharmacology for the dental hygienist. 4ª ed. Mosby. St Louis. 2000
- Clemente Muriel y José Luis Madrid. Estudio y tratamiento del dolor agudo y crónico. ELA. 1994