

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

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|----------------------|------------------------|
| Code | 43041 |
| Name | Update on therapeutics |
| Cycle | Master's degree |
| ECTS Credits | 10.0 |
| Academic year | 2021 - 2022 |

Study (s)

| Degree | Center | Acad. year | Period |
|---|---------------------------------------|-------------------|---------------|
| 2138 - Master's Degree in Research in and Rational Use of Medicines | Faculty of Pharmacy and Food Sciences | 1 | Annual |
| 3103 - Doctoral Programme in Biomedicine and Pharmacy | Doctoral School | 0 | First term |

Subject-matter

| Degree | Subject-matter | Character |
|---|-----------------------------|------------------|
| 2138 - Master's Degree in Research in and Rational Use of Medicines | 17 - Update in therapeutics | Optional |

Coordination

| Name | Department |
|----------------------------|--------------------|
| IVORRA INSA, MARIA DOLORES | 135 - Pharmacology |

SUMMARY

This matter deals with an analysis of the therapeutic possibilities in different pathologies evaluating the appropriate use of drugs in different diseases and assuming recommendations based on clinical evidence and new therapeutic incorporations. It is based on clinical guidelines and lists the most current future perspectives with drug under investigation. The treatments listed pharmacological and non pharmacological aspects, the study of common problems related to drug therapy and how to prevent, correct or minimize them.

It is noteworthy that the competencies and learning outcomes to be achieved in this subject, as well as the teaching methodology used, are part of the Sustainable Development Goals (SDGs) promoted by the United Nations (Agenda 2030). Among them, it is important to highlight the Rational Drug and the promotion of Community Health (Objective 3: Health and Well-being) and Quality Education (Objective 4).



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Previous knowledge of Pharmacology, pharmacokinetics and English is required.

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

2138 - Master's Degree in Research in and Rational Use of Medicines

- Manejar adecuadamente las fuentes de información biomédica y poseer la habilidad de hacer una valoración crítica de las mismas integrando la información para aportar conocimientos a grupos asistenciales multidisciplinares
- Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.
- Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.
- Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.
- Students should demonstrate self-directed learning skills for continued academic growth.
- To acquire basic skills to develop laboratory work in biomedical research.
- Be able to make quick and effective decisions in professional or research practice.
- Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Be able to integrate new technologies in their professional and/or research work.
- Know how to write and prepare presentations to present and defend them later.
- Ser capaces de analizar de forma crítica tanto su trabajo como el de su compañeros.
- To be able to assess the need to complete the scientific, historical, language, informatics, literature, ethics, social and human background in general, attending conferences, courses or doing complementary activities, self-assessing the contribution of these activities towards a comprehensive development.
- Be able to apply the research experience acquired to professional practice both in private companies and in public organisations.



- Dominar la comunicació científica. Poseer habilidades sociales y comunicativas en la práctica asistencial.
- Capacidad de seleccionar y gestionar los recursos disponibles (instrumentales y humanos) para optimizar resultados en investigación.
- Dominar el método científico, el planteamiento de protocolos experimentales y la interpretación de resultados en la búsqueda, desarrollo y evaluación de nuevos fármacos.

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

At the end of the teaching-learning process the student should be able to:

1. Analyze and evaluate scientific data concerning the drug
2. Apply pharmacotherapeutic knowledge to clinical practice: management and interpretation of clinical guidelines.
3. Verify the information provided by clinical trials with clinical guidelines and treatment.
4. Prevent, identify and resolve problems arising from drug.
5. Set the location of the new pharmacotherapeutic treatment.

DESCRIPTION OF CONTENTS

1. Study of interactions of clinical relevance and the involved mechanisms

The student should acquire knowledge of the adverse effects which may occur in the pharmacotherapeutic treatments, which are administered two or more drugs as a result of the interactions that occur between them, both pharmacological and pharmacokinetic. It must therefore have knowledge of Pharmacodynamics, pharmacokinetics and pathophysiology, basic-level medium.

- Tools and methodology for detection and evaluation of drug interactions
- Interactions at the level of metabolism: enzyme inhibition and induction
- Interactions in the renal excretion: a level of glomerular filtration, tubular reabsorption of passive and active tubular secretion
- Pharmacodynamic interactions.
- Interactions in special population groups (elderly, children, pregnant women) and practical significance

2. Therapeutic strategies for different diseases

Pharmacotherapeutic strategies in inflammatory and painful processes: treatment of rheumatoid arthritis and osteoarthritis

Pharmacotherapy of respiratory diseases: asthma and COPD

Pharmacotherapy of gastrointestinal disorders: treatment of ulcers and GERD, treatment of inflammatory bowel diseases.

Cardiovascular pharmacotherapy of obesity and diabetes: treatment of hypertension, treatment of angina



and other ischemic vascular processes, treatment of dyslipidemia , treatment of diabetes.
Pharmacotherapy of thyroid disorders, osteoporosis and other hormonal disturbances.
Drug therapy of neurodegenerative disorders and motor, affective, and behavioral sleep: treatment of Alzheimer's, treatment of depression, mania, anxiety and insomnia.
Pharmacotherapy of diseases of the skin and mucous membranes (acne, dermatitis, psoriasis).
Pharmacotherapy of neoplastic processes.

WORKLOAD

| ACTIVITY | Hours | % To be attended |
|--------------------------------------|---------------|------------------|
| Theory classes | 40,00 | 100 |
| Group work | 30,00 | 100 |
| Seminars | 20,00 | 100 |
| Tutorials | 10,00 | 100 |
| Development of group work | 15,00 | 0 |
| Development of individual work | 40,00 | 0 |
| Study and independent work | 15,00 | 0 |
| Readings supplementary material | 25,00 | 0 |
| Preparation of evaluation activities | 15,00 | 0 |
| Resolution of case studies | 40,00 | 0 |
| TOTAL | 250,00 | |

TEACHING METHODOLOGY

During the activities, both theoretical and practical, the applications of the subject contents in relation to the Sustainable Development Goals (SDG) will be indicated. This is intended to provide knowledge, skills and motivation to understand and address these SDGs, while promoting reflection and criticism.

Theoretical classes, participatory lecture

Discussion of items (readings)

Resolution of case studies

Lectures by experts

Lectures. To obtain the knowledge of therapy, the basis of pharmacokinetic and pharmacodynamic interactions, information search strategies, exposure of therapeutic strategies, clinical guidelines recommendations.... using audiovisual equipment to develop them. Previous to the lectures teachers will provide students the bibliographic information and audiovisual material in the teaching support platform "Aula Virtual".



Seminars clinical care problems We propose different problems / case studies, representative of the pharmacotherapy of various diseases to study, to be solved by students and then discussed in sessions in which we have the support of an expert on the topic, which will provide the clinical vision. The student has the educational material provided by the teacher in the *Virtual Classroom* (Pharmacotherapy of different pathologies, clinical guidelines, pharmacotherapy articles, clinical trials). Students should solve the problem individually and deliver a written report to the teacher before the discussion session. For joint discussion of the problem, students in groups will be responsible for developing a specific case and conduct the oral presentation of it.

To complete teaching:

-Online questionnaires of each of the topics planned will be carried out to review concepts and promote continuous learning, which will mean a total of 15h. The tools "questionnaires" and "tasks" of the virtual classroom will be used. The grade obtained will be taken into account for the continuous evaluation.

-The time dedicated to the care problem solving seminars will be extended, which will mean a total of 15h.

As a communication medium we use the *Virtual Classroom* platform of the University of Valencia that allows teacher-student communication and storage of slides and other teaching resources that are available to students.

EVALUATION

Continuous assessment:

Active participation in the sessions 10%

Oral presentation and discussion of work 20%

Online questionnaires 10%

Individual work 40%

Group work 20%

To pass the course it will require a positive evaluation (greater than or equal to 50%) in each of the preceding paragraphs.

REFERENCES

Basic

- Baños J, Farré M. Principios de Farmacología Clínica.. Masson, 2002



- Baxter k. Stockley. Interacciones farmacológicas. Pharma ed. 2007
- Brunton LL, Lazo JS, Parker KL, G, Goodman & Gilman- Las bases Farmacológicas de la Terapéutica. 12ª ed., Mc Graw-Hill Interamericana, 2012.
- Florez J, Armijo, JA, Mediavilla A. Farmacología humana 6ª ed Elsevier, 2013.
- López AC, Moreno L, Villagrasa V. Manual de Farmacología. Guía para el uso racional del medicamento. Elsevier. 2010
- Lorenzo P, Moreno A, Leza JC, Lizasoain I, Moro MA. Portoles A. Velázquez-Farmacología básica y clínica. 19ª ed. Panamericana 2018
- Martín Zurro, Cano Pérez. Atención Primaria.. 4ª ed. Harcourt. 1998
- Rang HP, Dale MM, Ritter JM. Farmacología. 9ª ed., Elsevier, 2020.
- Velasco-Martin, A. Farmacología Clínica y Terapéutica Médica. McGraw-Hill-Interamericana, 2004
- Waldman S, Terzic A. Farmacología y terapéutica: principios para la práctica. Manual Moderno, 2010
- STOCKLEY I. Stockley. Interacciones Farmacológicas. Editorial Ars Medica, 3ª edición (2009)
- STOCKLEY'S DRUG INTERACTIONS POCKET COMPANION 2012. Baxter, K. Pharmaceutical Press, 1ª edición (2012)
- Hansten, P. Horn, J. TOP 100 DRUG INTERACTIONS. A GUIDE TO PATIENT MANAGEMENT 2011. 1ª edición (2011) ISBN-139780981944029
- Medimecum 2009: Guía de terapia farmacológica. 14ª ed. Adis, 2009
- The Merck Index. 14ª ed. Mosby

Additional

- Alertas de medicamentos AEMPS
<http://www.agemed.es/actividad/alertas/usoHumano/seguridad/home.htm>
- Boletines de información farmacoterapéutica elaborados por las distintas Comunidades
Enlaces en <http://www.elcomprimido.com/>
- Catálogo de especialidades farmacéuticas. Consejo General de Colegios Oficiales de Farmacéuticos. 2009
- Manual Merck de Diagnóstico y Terapéutica 16ª edición, Elsevier, 2006
- Guía de la Buena Prescripción. OMS, 1998
- Guía terapéutica en Atención Primaria. 5ª ed. SEMFYC, 2013
- Agencia Española del Medicamento. <http://www.agemed.es>
- Base de Datos del medicamento. Consejo General de Colegios Oficiales de Farmacéuticos.
<http://www.portalfarma.com>
- Base de Datos PubMed. U.S. National Library of Medicine and the National Institutes of Health.
<http://www.pubmed.com>



- Fundació Institut Català de Farmacologia
<http://www.icf.uab.es/Index.html#>

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1. Contents

All the contents initially programmed in the teaching guide are maintained.

2. Workload

The volume of work and the temporary planning thereof are maintained, but, if the health emergency of COVID-19 makes it necessary, the teaching will be given in a non-face-to-face way.

3. Teaching methodology

- Upload to the virtual classroom the materials for the theoretical classes (ppt and / or pdf) and the clinical case resolution seminars.
- Both the theoretical classes and the clinical case seminars will be given on the same dates and times scheduled through synchronous BBC videoconference.
- Use of the tools "questionnaires" and "tasks" of the virtual classroom to review concepts and promote continuous evaluation.
- The tutorials with the students and the resolution of doubts will be carried out through email and the virtual classroom forum.

4. Evaluation

The final evaluation will be the one described in the teaching guide.

5. Bibliography

The same bibliography recommended in the teaching guide is maintained.