

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

Code	34102
Name	Pharmacoepidemiology
Cycle	Grade
ECTS Credits	4.5
Academic year	2020 - 2021

Study (s)

Degree	Center	Acad. year	Period
1201 - Degree in Pharmacy	Faculty of Pharmacy and Food Sciences	5	First term

Subject-matter

Degree	Subject-matter	Character
1201 - Degree in Pharmacy	37 - Pharmacoepidemiology	Optional

Coordination

Name	Department
MORALES SUAREZ-VARELA, MARIA MANUELA	265 - Prev. Medicine, Public Health, Food Sc., Toxic. and For. Med.

SUMMARY

Pharmacoepidemiology is an optional subject offered to complete the training of future graduates in Pharmacy in the medicines field. It applies tools and the epidemiological method to investigate and study their correct usage, and to evaluate risks, interactions and contraindications, and their relationship with the economy by means of cost-effectiveness analyses, to correctly select medications.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**



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

Other requirements

Having studied basic subjects (statistics, chemistry, biochemistry and physiology) is recommended. Having acquired basic knowledge about pharmacology and pharmaceutical technology is also recommended.

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

1201 - Degree in Pharmacy

- Reinforce the acquisition of the general competences of the Curriculum of Degree in Pharmacy.
- To know the concept of pharmacoepidemiology and the study of the epidemiological logic in the evaluation of the drug.
- To know and evaluate the use of pharmacoepidemiology techniques and to design pharmacoepidemiological studies.
- To know the applications of pharmacoepidemiology in the field of clinical trials and in the study of the adverse effects of drug.
- Acquire knowledge for studies of drug use and pharmacovigilance.
- To acquire knowledge of pharmacoeconomics fundamentally applied to the analyzes of cost-effectiveness in the drug.
- Know the reasons and techniques for drug selection.
- To know the essential medicines and to acquire knowledge in the techniques of information and education on the drug.

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

The results of learning must lead to:

1. Knowing the pharmacoepidemiology concept and the study of epidemiological logic in evaluating medicines. Knowing and evaluating the determining factors of health.
2. Knowing and evaluating the use of pharmacoepidemiology techniques and designing pharmacoepidemiological studies. Knowing the healthcare education methods and means.
3. Knowing the pharmacoepidemiology applications in the field of clinical assays and in the study of the adverse effects of medicines. Knowing the techniques and applications in the environmental healthcare field, healthcare and industrial hygiene, basically in the pharmaceutical industry.
4. Acquiring knowledge to conduct studies about the use of medicines and pharmacovigilance. Acquiring knowledge about epidemiology and preventing transmissible and non-transmissible diseases.
5. Acquiring knowledge about pharmacoeconomy, basically its application to cost-effectiveness analyses in terms of medicines. Acquiring knowledge on planning and preventing occupational risks.



6. Knowing the reasons and techniques to select medicines.
7. Knowing essential medicines and acquiring knowledge of information techniques and education on medicines.

DESCRIPTION OF CONTENTS

1. STUDIES INTO USES OF MEDICINES

Medicines: benefits in relation to risks: Pharmacoepidemiology. Concept. History. Methods of studies into uses of medicines. Measurement units. Quality measurement parameters. Consumption database. Morbidity and mortality data applied to study undesirable effects caused by drugs and medicines. The spontaneous notification system of adverse reactions and WHO's Pharmacovigilance Programme. Postcommercial vigilance methods. Monitoring prescription-linked events. Studies into medical prescription habits. Studying prescription fulfilment. Vigilance addressing specific problems.

2. DESIGNING PHARMACOEPIDEMIOLOGICAL STUDIES

Types of studies into Pharmacoepidemiology. Drugs pharmacovigilance or monitoring studies. A case-control design in pharmacovigilance. Selecting cases and controls. Information about exposures. The cohort design when analysing the undesirable effects of medicines. Detecting adverse reactions. Intensive vigilance in hospitalised patients. Between the clinical assay and Epidemiology: overlaps. Between the clinical assay and Epidemiology: limits and research. Study types in Pharmacoeconomy. Assessing medicines economically: costs. Assessing medicines economically: Pharmacoeconomy. Assessing medicines economically: cost-effectiveness analysis. Selecting medicines at a national level. Selecting medicines at the international level. Essential medicines in primary healthcare. Information and education on medicines

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	26,00	100
Computer classroom practice	10,00	100
Tutorials	5,00	100
Preparing lectures	50,00	0
Preparation of practical classes and problem	17,50	0
TOTAL	108,50	



TEACHING METHODOLOGY

Teaching is based on the individual study of themes undertaken during theoretical classes, which are reinforced by computer science practical sessions to mainly address knowledge of computer tools and programmes to create databases and their subsequent epidemiological analysis.

Students will also have tutorships to be able to obtain more in-depth information about the most relevant and up-to-date aspects in this subject and to solve any doubts they may have in a personalized fashion.

EVALUATION

The corresponding evaluation of the assignments done during seminars will represent 15% of the final mark; attendance in all the practical classes is compulsory.

Attendance and participation in class will represent 5% of the final mark.

Knowledge acquirement will be evaluated by means of a written test which will represent 80% of the overall mark

REFERENCES

Basic

- Argimón JM, Jiménez J, Ed. Métodos de investigación clínica y epidemiológica. Barcelona: Harcourt, 2004.
- Fletcher RH, Fletcher SW, Wagner EH. Epidemiología Clínica. 2ª ed. Madrid: Elsevier-Masson, 2007.
- Laporte JR, Togoni G. Principios de epidemiología del medicamento. Barcelona: Salvat.
- Sacristán JA, Badía X, Rovira J. Farmacoeconomía: Evaluación económica de Medicamentos. Editores Médicos S.A. 1995.

Additional

- Drummond M, Stoddart GL, Torrance GW. Métodos para la evaluación económica de los programas de atención de la salud. Ed. Días de Santos, 1991.
- Segundo Informe del Comité de Expertos de la OMS. Uso de Medicamentos esenciales. Organización Mundial de la Salud. Serie de informes Técnicos 722. Ginebra: Organización Mundial de la Salud, 1985.



ADDENDUM COVID-19

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

Description of contents

The contents provided in the Teaching Guide are maintained.

Work volume

1. The weight of the different activities that add the hours of dedication in ECTS credits marked in the teaching guide of the 2019-2020 course is maintained.
2. 26 hours of theory classes that if possible will be taught in person. If the health situation so requires, these classes would be taught in a non-face-to-face mode. In this case, they would be taught through the Virtual Classroom on the days and hours established by the UV by synchronous videoconference and with the support of materials uploaded to the Virtual Classroom.
3. The 10 hours of practices in the computer room are maintained in face-to-face mode in small groups guaranteeing the necessary security measures, as far as possible. on the days and hours established by the UV.
4. The 5 hours of regulated tutorials are maintained in face-to-face mode in small groups guaranteeing the necessary security measures, as far as possible. on the days and hours established by the UV.

Teaching methodology

The teaching methodology will include, as far as possible, the materials provided in the teaching guide of the 2019-2020 course for face-to-face teaching to which the methodologies listed below can be added according to the needs of the course and the assessment of the teaching staff :

1. Upload of materials to the Virtual Classroom
2. Proposal of activities for Virtual Classroom
3. BBC synchronous video conference
4. BBC Asynchronous Video Conference
5. Recorded transparencies
6. Discussions in the forum



7. Problems / exercises solved
8. Videos recorded in the laboratory
9. Work with simulators or calculation packages
10. Project development
11. Tutoring by videoconference
12. Forum in Virtual Classroom

Evaluation

For examinations, and to ensure rigor and fairness in evaluations, we are always bound by ethical principles that we all understand. In these exceptional circumstances in which we are, students are asked to increase their ethical commitment to carry out the theoretical exam and other evaluable activities.

The theoretical evaluation will be carried out on the date and time scheduled and indicated by the center.

In addition, we ask that you take into account that the other scheduled activities (practices, seminars and tutorials), which by definition are evaluable, will be carried out according to the established schedule as far as possible in small groups, guaranteeing the necessary security measures.

The final grade will be calculated based on the weighting of the following components: 60% theory, 15% practice and 15% tutoring and 10% continuous assessment.

It is made explicit that, to make a grade, it is necessary to have obtained at least a 5 in the theoretical exam.

The Honor Registration will be the best grade higher than 9.0.

The evaluation of the different components is described below:

1. The theory will be evaluated by means of a 5-question theory test (free text answer exam) that will be developed in person if possible or through the Virtual Classroom if its administration is necessary in a non-face-to-face mode. The questions will be asked by the teachers who have taught the subject in proportion to the teaching given and in the language taught.

In case the exam is not carried out in person:

Those students with exceptional circumstances, (disability / functional diversity, death of a family member, working in the health system, not having adequate access to the internet, etc.) should notify the subject coordinator as soon as possible and always prior to the exam for assess possible alternatives.

Those students who have internet access problems through the use of a computer will be able to take the exam via mobile phone, having previously communicated this situation to the coordinator of the course.



2. The practices will be valued based on attendance, participation and the exercises delivered on time, answering the questions posed in the selected practices.
3. The tutorials will be evaluated by attendance, participation and the works delivered on time, answering the questions posed in the selected tutorials.
4. Continuous assessment activities include class attendance and participation.

References

The bibliography recommended in the Teaching Guide is maintained.