Teaching guide

IDENTIFICATION DETAILS

Degree:	Pharmacy
Scope	Pharmacy
Faculty/School:	Experimental Sciences
Course:	SCIENTIFIC METHODOLOGY
Type:	Compulsory
ECTS credits:	6
Year:	4
Code:	2548
Teaching period:	Eighth semester
Subject:	Social Pharmacy
Module:	Legislation and Social Pharmacy
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	150

DESCRIPCIÓN DE LA ASIGNATURA

The pharmacist's activity is based on his training as a drug scientist. To do this, it is necessary to have a high critical capacity and personal and professional references that enable you to prepare scientific reasoning with the greatest possible rigor. Their responsibility for improving healthcare and quality of life by designing new treatments for the disease makes it essential to have solid interdisciplinary training. The ability to understand, interpret, apply and propose scientific publications is an essential characteristic of the pharmaceutical professional.

The course consists of two distinct blocks. The first one will address aspects related to scientific thinking, rigor in the elaboration of hypotheses, the justification of scientific statements, the development of new drugs, etc. In the second, students will acquire the necessary skills to interpret scientific information from publications, mostly in English.

In addition, students will participate in the design and execution of an experimental laboratory project, determined by a scientific question proposed by the teaching staff of the subject.

OBJETIVO

Strengthen the student's independence in their development of scientific reasoning (hypothesis, experimental approach, empirical verification, data discussion), by encouraging scientific curiosity and ensuring that the student acquires an integrated vision of the scientific disciplines studied before the Degree.

Los fines especficos de la asignatura son:

Develop oral and written communication habits in Spanish and English.

Learn to work as a team and manage groups.

Acquire the capacity for analytical, synthetic, reflective, critical, theoretical and practical thinking.

Develop the capacity and commitment to own learning and personal development.

CONOCIMIENTOS PREVIOS

General knowledge seen before the Degree. Especially relevant will be those relating to Pharmacology, Physiology, Biochemistry, Toxicology and Pathophysiology. Critical reading and logical reasoning skills.

CONTENIDOS

BLOCK 1 Introduction The scientific process Historical review Foundations of scientific argument Rigor in the search for scientific information Presentation of scientific results Research career Formal and conceptual analysis of scientific articles BLOCK 2 Planning, design and execution of an experimental project in the laboratory.

ACTIVIDADES FORMATIVAS

FACE-TO-FACE TRAINING ACTIVITIES AFP1. Theory classes: Classes will be eminently practical and

participatory. The teacher in charge of the course will present some initial arguments and proposals and the students will carry out the corresponding analysis and discussion. The use of articles published in international scientific journals will be the usual norm. Special emphasis will be placed on the analysis of methodological aspects. The students will carry out frequent readings and will prepare the works proposed by the teacher. AFP2. Practical classes: students will participate in the design and execution of an experimental project, at the proposal of the teaching team of the subject. The preclinical study of a substance with therapeutic potential will be addressed. To this end, students will propose options for the chemical and molecular characterization of this substance, as well as for its functional analysis. The means proposed by the teaching staff and available in the laboratory will be used, which will include chemical, pharmacological and biotechnological tools, among others. AFP3. Classes of exercises and problems: Proposal and resolution of practical cases. AFP4. Seminars and/or exhibition of works: Students will do work that will deal with one of the topics of the syllabus. AFP5. Tutoring. Personalized attention to the student for the resolution of doubts, additional information, etc. The tutoring schedule can be consulted at the coordination of the degree and will be informed by the teacher at the beginning of the course NON-FACE-TO-FACE TRAINING ACTIVITIES AFNP1. Study of theory, exercises and problems. AFNP2. Preparation and study of practices. AFNP3. Preparation of works. AFNP4. Tutoring preparation.

DISTRIBUCIÓN DE LOS TIEMPOS DE TRABAJO

ACTIVIDADES FORMATIVAS DIRIGIDAS POR EL PROFESOR	TRABAJO AUTÓNOMO
60 Horas	90 Horas

RESULTADOS DE APRENDIZAJE

Know the principles and scientific methodology applied to pharmaceutical sciences, including the history and social function of Pharmacy.

Master information retrieval techniques related to primary and secondary sources of information (including databases with the use of computers).

RESULTADOS DE APRENDIZAJE ESPECÍFICOS

Facilitate the acquisition of the necessary skills so that they can apply their knowledge.

Apply as and when necessary, by adopting the necessary activities, knowledge and acquired skills.

Summarize the process of generating technical-scientific information.

Synthesize and organize bibliographic and technical information.

Determine the parts of the scientific work and the bibliographic citations.

Use information and communication technologies.

Use bibliographic sources appropriately.

Prepare oral and written communication effectively.

SISTEMA DE EVALUACIÓN DEL APRENDIZAJE

The evaluation will follow the following scheme:
ISE1. Written or oral tests + SE2. Daily activities and exercises + SE3. Individual and group work + SE4. Participation in face-to-face classroom activities: 50%.
SE8. Attendance and participation in face-to-face activities in the laboratory
The grade will be the average provided for each of the sections. To pass the course, it will be necessary to have obtained a grade of 5.0 in the block (SE1, SE2, SE3 and SE4) and of 5 in the other (SE8) in which the subject is divided.
Alternative evaluation system: - Students in second or subsequent enrollment may take advantage of this system. They must contact the teacher to request to take advantage of this system. Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with those established in the Evaluation Regulations and the University's Coexistence Regulations.

USO ÉTICO Y RESPONSABLE DE LA INTELIGENCIA ARTIFICIAL

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:
a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.
2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the Guide for the Responsible Use of Artificial Intelligence in Studies at UFV. Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.

3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAFÍA Y OTROS RECURSOS

Básica

Ramón y Cajal, Santiago (1852-1934) The Tonics of the Will: Rules and Advice on Scientific Research/Madrid:Gadir, 2016.

Comellas, José Luis. Simple History of Science/Madrid, :Rialp, 2007.

Mukherjee, Siddhartha. The gene: a personal story/Barcelona: Debate, 2017.