Teaching guide

IDENTIFICATION DETAILS

Degree:	Pharmacy
Scope	Pharmacy
Faculty/School:	Experimental Sciences
Course:	PHYSICS
Type:	Basic Training
ECTS credits:	6
Year:	1
Code:	2515
Teaching period:	First semester
Subject:	Physics
Module:	Physics and Mathematics
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	150

SUBJECT DESCRIPTION

Present the basic physical concepts, focusing on their practical application to the subjects that will be the student's competence throughout the training.
All the physics presented will be applied to topics of biological, biophysical, pharmaceutical and biotechnological interest to show the student that with basic but general training, important works both historical and of the most recent news can be addressed.

GOAL

Create solid foundations, based on the fundamentals and working methodology of Physics, on which to base future knowledge in other scientific areas.
Get the student to associate the physical quantities of a system to its properties and to the physical processes in which it is involved.

PRIOR KNOWLEDGE

To study the subject of Physical Foundations and obtain optimal use of the subject, you should have the level of knowledge of 2nd year of Baccalaureate for the subjects of Physics and Mathematics.

COURSE SYLLABUS

THEORETICAL SYLLABUS

BLOCK 0: Foundations of Physics and Mathematics.
BLOCK 1: Fluids.
BLOCK 2: Transport Phenomena.
BLOCK 3: Electromagnetism and fundamentals of spectroscopy.

PRACTICAL SYLLABUS

Introduction to using Excel.
Absorbance measures and application of the Lambert-Beer Law.
How to prepare a report and carry out bibliographic searches.

EDUCATION ACTIVITIES

FACE-TO-FACE WORK ACTIVITIES:

- [AFP1] THEORETICAL CLASSES: The teacher will develop the theoretical concepts that are part of the subject.

- [AFP2] PRACTICAL CLASSES: In class, the teacher will develop as many of the problems proposed in the syllabus as part of learning, proposing some for the student to solve. Some computational tools will be shown that the student can use to easily solve mathematical problems.

- [AFP3] PROBLEMS AND EXERCISES: the student will deliver and/or present exercises during the course, supplementing those presented by the teacher.

- [AFP4] SEMINARS AND EXHIBITION OF WORKS. Theoretical-practical seminars and presentation of papers will be held by the teacher in which the student demonstrates the evolution in the subject.

- [AFP5] TUTORING: Personalized attention to the student to review the contents explained in class, answer questions or discuss specific topics in order for the student to achieve the objectives set by the teacher.

SELF-EMPLOYMENT ACTIVITIES

- [AFNP1] INDIVIDUAL WORK: Preparation, study and consolidation by the student of the theoretical contents and practical cases proposed in the exhibition sessions and consolidation seminars.

- [AFNP2] PREPARATION AND STUDY OF PRACTICES AND PROBLEMS.

- [AFNP3] WORK PREPARATION

- [AFNP4] TUTORING PREPARATION

* The tutoring schedule can be consulted in the degree coordinator and will be informed by the teacher at the beginning of the course

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
64 Horas	86 Horas

LEARNING RESULTS

Evaluate scientific data related to drugs and medical devices.

Apply the knowledge of Physics and Mathematics to the pharmaceutical sciences.

SPECIFIC LEARNING RESULTS

Identify the origin of chemical and physical phenomena and their applications in biological-biochemical processes and in pharmaceutical technology.

Formulate thermodynamic principles

Interpret the logical developments of physical principles for application to chemical, biological and pharmaceutical problems.

Use thermodynamic applications in phase and chemical reaction equilibria.

Build models of solutions and their application to the study of real (electrolytic and non-electrolytic) solutions

Interpret the meaning of the physical properties of chemicals and drugs used in the pharmaceutical industry.

Use computational tools for obtaining and analyzing data.

LEARNING APPRAISAL SYSTEM

REGULAR EVALUATION SYSTEM
The course is passed when a final grade of 5.0 is reached. The final grade will be the weighted average of the evaluation of the following aspects:

WRITTEN TESTS (SE1) (65%): Final exam of the subject will cover the content of blocks 0 to 3, and will be taken during the exam period. It will be necessary to achieve a score equal to or greater than 5.0 so that it can be averaged with the rest of the points to be evaluated.
ATTENDANCE AND PARTICIPATION IN CLASSROOM ACTIVITIES (SE2) (5%): Theory classes and exercise seminars. Attendance to theory classes and seminars is mandatory. The active participation of the student in the different teaching activities will be positively evaluated. The evaluation of student performance in the application of the concepts taught in theory will be carried out by solving practical exercises and assumptions in seminar classes.
INDIVIDUAL OR GROUP WORK (SE3) (15%): Delivery of exercises. The delivery of exercises proposed by the teacher will be evaluated in the different blocks of theory taught throughout the course. If you pass this part, the grade obtained may be kept until the extraordinary call.
PRACTICAL CLASSES (SE4) (15%): Laboratory practices. Attendance at practical laboratory sessions and delivery of reports corresponding to those sessions. It will be necessary to obtain a grade higher than 5.0 in this section in order to pass the course. Students who do not pass this part must complete a theoretical exercise for evaluation in the extraordinary call. If you pass this part and not the part corresponding to the theoretical exam, the practice note may be kept until the extraordinary call.

RECOVERY IN EXTRAORDINARY CALL: For the recovery of written tests in the EC, a single written exam will be carried out that includes the theoretical concepts of blocks 0 to 3, and whose weight represents 65% of the final grade. To be able to average with the rest of the points to be evaluated, the score must be equal to or greater than 5.0.
ALTERNATIVE EVALUATION SYSTEM FOR STUDENTS IN SECOND ENROLLMENT
The alternative evaluation system is intended ONLY for those students in second enrollment who, due to their academic circumstances, cannot attend classes regularly. Students in second or subsequent enrollment must contact the teacher to request to take advantage of this system. In this case, the evaluation will have the following percentages:

WRITTEN TEST (70%): Content of blocks 0 to 3. It will be held on the date established for the examination of the Ordinary Call.
WORK (15%): Delivery of exercises. The content of the work will be the same as that of the students in the first call. The delivery date will be adapted to the needs of students in second enrollment.
PRACTICAL CLASSES (15%): Laboratory practices. The practical classes will be evaluated as if the subject were enrolled for the first time, that is, by attending all the practice sessions and providing the memory of the practices.
IMPORTANT: Attendance at all practical sessions is mandatory, regardless of where they take place: laboratory, computer rooms, etc. Unjustified non-attendance at any of these sessions leads to the automatic loss of the right to evaluation of practices in the ordinary call and a suspension of the course.

IMPORTANT NOTE: 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.

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

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.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Paul A. Tipler, Gene Mosca. Physics for Science and Technology/6th ed. Barcelona:Reverté, 2016
(Paul A. Tipler, Gene Mosca. Physics for Science and Technology/6th ed. Barcelona:Reverté, 2016 , ||Paul A. Tipler, Gene Mosca. Physics for Science and Technology.Mechanics/6th ed. Barcelona [etc.] :Reverté, 2017)

Alcaraz i Sendra, Olga. Physics: Solved Problems and Exercises/Madrid: Pearson Education, 2006.

Nelson, Philip. Biological Physics: Energy, Information, Life/Barcelona:Reverté, 2005.
(Nelson, Philip. Biological Physics: Energy, Information, Life/Barcelona:Reverté, 2005. , ||Bueche, Frederick J. General Physics [electronic resource]/10th ed. Mexico: McGraw-Hill/Inter-American, 2007.)