

27231 - Nuclear Chemistry. Physicochemical Properties of Drugs and Radiopharmacy

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	452 - Degree in Chemistry
ECTS	5.0
Year	4
Semester	Second semester
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is strongly related to understanding and reasoning processes. A wide range of teaching and learning tasks are implemented, such as theoretical sessions, group work presentation and seminars.

Students are expected to participate actively in the class throughout the semester.

27231 - Nuclear Chemistry. Physicochemical Properties of Drugs and Radiopharmacy

Classroom materials will be available via Moodle. These include a repository of power point used in class, the course syllabus, as well as other learning resources and online support material.

Further information regarding the course will be provided on the first day of class.

5.2.Learning tasks

The course includes 5 ECTS organized according to:

- Formative activity 1 (4 ECTS): Interactive lecture classes on nuclear chemistry, physicochemical properties of drugs and radiopharmacy (see section 5.3 for the topics).
- Formative activity 2 (0,75 ECTS): Practical visits to nuclear medicine, radiotherapy and radiodiagnosis installations under the supervision of personnel of radiology and physical medicine. In this formative activity is essential the participation of the students.
- Formative activity 3 (0,25 ECTS): Resolution of practical cases through the use of computer software.

5.3.Syllabus

1. The atomic nucleus
2. Kinetic aspects of radioactivity
3. Radioactive decay
4. Natural and artificial radioactivity
5. Radiation effects on matter
6. Detection of radiation
7. Biological effects of radiation
8. Radiation protection
9. Medical applications of radioisotopes
10. Radiopharmacy
11. Physico-chemical properties and drug stability
12. Classification and management of radioactive waste

27231 - Nuclear Chemistry. Physicochemical Properties of Drugs and Radiopharmacy

5.4. Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Ciencias " website.

5.5. Bibliography and recommended resources

BB Radiaciones ionizantes : utilización y riesgos / Xavier Ortega Aramburu, Jaume Jorba Bisbal, ed. . Barcelona :

Editions de la UPC, 1998-2000 [2 vol.]

BB Mallol, J.. Manual de radiofarmacia. Díaz de Santos. 2008

BR Shaw Martos, María. Física nuclear : problemas resueltos / María Shaw y Amalia Williard Madrid : Alianza, D.L.

1996

BR Lieser, Karl Heinrich. Nuclear and radiochemistry : fundamentals and applications / Karl Heinrich Lieser . - 2nd rev.

ed. Berlin [etc.] : Wiley-VCH , 2001

BR Choppin, Gregory R.. Radiochemistry and nuclear chemistry / by Gregory R. Choppin, Jan-Olov Liljenzin and Jan

Rydberg . - 3rd ed. Woburn [Massachusetts] : Butterworth-Heinemann, cop. 2002

BR Saha, Gopal B.. Fundamentals of nuclear pharmacy. 6th. ed. Springer. 2010

BR Knoll, Glenn F.. Radiation detection and measurement / Glenn F. Knoll . - 4th. ed. New York [etc.] : John Wiley &

Sons, cop. 2010

BR Ferrer Soria, Antonio.. Física nuclear / Antonio Ferrer Soria, María Shaw Martos, Amalia Williard Torres. . - [1ª ed.]

Madrid : Universidad Nacional de Educación a Distancia, 2002.