

Academic Year/course: 2022/23

26924 - Quantum Physics II

Syllabus Information

Academic Year: 2022/23

Subject: 26924 - Quantum Physics II

Faculty / School: 100 - Facultad de Ciencias

Degree: 447 - Degree in Physics

ECTS: 8.0

Year: 3

Semester: Second semester

Subject Type: Compulsory

Module:

1. General information

1.1. Aims of the course

The aims of the course are aligned with the following Sustainable Development Goals (SDGs):

- Goal 4: Quality Education
- Goal 12: Responsible Consumption and Production

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, laboratory sessions and an exam.

4.2. Learning tasks

This is an 8 ECTS course organized as follows:

- Lectures (5.5 ECTS)
- Practice sessions (1.5 ECTS)
- Laboratory sessions (1 ECTS)

4.3. Syllabus

The course will address the following topics:

- Topic 1. Harmonic oscillator: Creation and annihilation operators
- Topic 2. Identical particles
- Topic 3. Stationary and time dependent perturbations
- Topic 4. Variational method

- Topic 5. Helium atom. Multi-electron atoms. Periodic table
- Topic 6. Chemical bonding. Molecular physics

4.4. Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences website.

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26924>