SHORT DESCRIPTION AND JUSTIFICATION (of the meaning of the course in relation to the studies. Between 100 and 200 words)

The course goal is that students acquire knowledge about the scientific basis of drugs’ action, that is to say, the basis of pharmacokinetics and pharmacodynamics. In the course, the different phases of drug discovery and development (pre-clinical and clinical) will be studied. Moreover, it is a goal of this course that students learn about the therapeutic action of the main classes of drugs, grouped by mechanism of action and therapeutic indication.

COMPETENCES (of the course placed in relation to the pre-assigned competences in the subject matter)

- That students know how to apply their knowledge to their work or vocation in a professional manner and have acquired the competencies that allow them to elaborate and defence arguments as well as to solve problems within their area of study. (CB2)

- Be able to understand and apply advanced knowledge of Biosciences and Engineering to the field of Biotechnology. (E3)

- Be able to use tools, systems or processes to carry out the activities in the field of Biotechnology according to the established requirements. (E4)

PREVIOUS REQUIREMENTS * (modules, subject matters, courses or knowledge necessary for the follow-up of the subject. State previous courses required to be completed)

It is necessary that the students have been previously enrolled in organic chemistry, biochemistry, animal and molecular biology courses.

* These features should not be modified without the approval of the academic board (subject matter, module and / or studies program).
CONTENTS (List the content of the course, with up to two level detail)

1. Introduction.
3. Pharmacokinetics. ADMET processes.
4. Toxicology and adverse effects of drugs.
5. Drug discovery and development.
6. Anti-infective pharmacology.
7. Pharmacology of the autonomous nervous systems chemical mediators.
8. Analgesics and NSAIDs.
9. Antitumoral chemotherapy.
10. Antidiabetic drugs.
11. Antidepressant and anxiolytic drugs.
12. Antihypertensive drugs.
13. Miscellaneous (cardiotonic drugs, cannabinoids pharmacology, antiulcer drugs).

METHODOLOGY

LEARNING ACTIVITIES * (Complete the table relating activities, workload in ECTS credits, and competences.)

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th>ECTS Credits</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1.3</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Case and Problem-Solving Sessions</td>
<td>0.1</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Seminars</td>
<td>0.1</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Practical and Lab Work</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Presentations</td>
<td>0.1</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Personal Study</td>
<td>3.3</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Assessment Tasks (Exams, Continuous Assessment...)</td>
<td>0.1</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5.0</td>
<td>B2, E3, E4</td>
</tr>
</tbody>
</table>

TEACHING METHODOLOGY (justify the teaching methodology in relation to the competences and course contents. Between 100 and 200 words)

The course is taught in sessions of concepts’ presentations by the lecturer, in seminars, case and problem-solving sessions. Training activities also include seminars lectured by experts in the specific field. The course is organised in chapters that include conceptual themes. Teaching methodology is based on the following activities:

- The slides presented by the lecturer in the development of the course will be available on Moodle at the end of each chapter.
- On the first day of the course, the contents, calendar and recommended bibliography will be presented.

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During the course, seminars will be organised. In those seminars, students will orally present in groups a theme that has been previously assigned by the lecturer. The day before the seminar, the students will email the lecturer the presentation. On the day of the oral presentation, the students will give the printed version of their assignment. The seminars’ themes and calendar will be decided during the course.

Personal work of the student is necessary to acquire the competences of each theme and to assimilate the knowledge presented in the sessions of concepts’ presentation, resolution of exercises, problems and cases. When necessary, the recommended bibliography may be used to gain a deeper understanding of a particular theme. They also include the preparation of tasks related to the other activities, and the preparation of exams.

**ASSESSMENT**

**ASSESSMENT METHODS** *(Complete the table relating assessment methods, competences, and weight percentage in the course qualification)*

<table>
<thead>
<tr>
<th>Assessment methods</th>
<th>Weight</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
<td>50%</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Midterm Exam/s</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Continuous Assessment Activities</td>
<td>20%</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Reports and Presentations</td>
<td>20%</td>
<td>B2, E3, E4</td>
</tr>
<tr>
<td>Lab or Field Work</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Projects</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Host Student Evaluation</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
<td>B2, E3, E4</td>
</tr>
</tbody>
</table>

**LEARNING OUTCOMES** *(Explanation of the student's achievements that allow the assessment of competences, relating them to the competences and the assessment methods)*

- The student needs to show knowledge of the fundamentals of pharmacology, pharmacokinetics and pharmacodynamics (B2, E3, E4).
- The student needs to show ability to identify, formulate and solve problems related to the rationale behind the use of drugs and their mechanism of action (B2, E3, E4).
- The student needs to show ability to assess the impact of Pharmacology and Biosciences on the sustainable development of society (B2).

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COURSE: THERAPEUTIC TARGETS AND PHARMACOLOGY

SUBJECT MATTER: Immunology & Pharmacology
MODULE: Biotechnology for Health
PROGRAM: Degree in Biotechnology

QUALIFICATION

<table>
<thead>
<tr>
<th>Qualification methods</th>
<th>Peso</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE: Final exam</td>
<td>50%</td>
</tr>
<tr>
<td>FA: Follow-up activities</td>
<td>20%</td>
</tr>
<tr>
<td>RP: Reports and presentations</td>
<td>20%</td>
</tr>
<tr>
<td>P: Participation</td>
<td>10%</td>
</tr>
</tbody>
</table>

- The qualification of the follow-up activities (FA, 20% of the final grade) will be calculated as a simple average of the activities carried out, consisting in the resolution of the questionnaires of each chapter that are organized. The submission of all the completed questionnaires is mandatory in order to be able to take the final exam. The qualifications of the follow-up activities will not be reported during the course.
- The qualification of Reports and presentations (RP, 20% of the final grade) will correspond i) to the oral presentations on a specific topic that will be carried out by the student and ii) to the written assignment that will be given to the lecturer on the same day. The grades of Reports and presentations will not be reported during the course.
- The qualification of the participation (P, 10% of the final grade) is awarded by the lecturer at the end of the course taking into account the participation and interest that the student has had in the global activities of the subject as well as his/her attitude in the classroom.
- The final exam (FE, 50% of the final grade) aims to assess the synthesis of the course.

ASSESSMENT OF THE COMPETENCES

- For the evaluation of B2 competence, the final exam grade (70%) and overall qualification of the follow-up activities (30%) will be used as indicator.
- For the evaluation of E3 competence, the indicator used will be the final grade of the subject.
- For the evaluation of E4 competence, the final exam grade (50%) and the presentation of the written assignments corresponding to the students' presentations (50%) will be used as an indicator.

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BIBLIOGRAPHY (Recommended and accessible to the student.)


DOCUMENT HISTORY

PREVIOUS REVISIONS (Indicate date and author / s, first the most recent one)

CURRENT REVISION (Indicate date and author / s)
March 1st, 2019. Dr Teresa Pellicer

* These features should not be modified without the approval of the academic board (subject matter, module and / or studies program).