<table>
<thead>
<tr>
<th>ASIGNATURA / COURSE TITLE</th>
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<tbody>
<tr>
<td>Aquatic Ecotoxicology</td>
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</table>

1.1. Código / Course number

32769

1.2. Materia / Content area

Aquatic Ecotoxicology

1.3. Tipo / Course type

Formación Optativa / Elective subject

1.4. Nivel / Course level

Máster / Master

1.5. Curso / Year

1º / 1st

1.6. Semestre / Semester

2º / 2nd

1.7. Idioma / Language

English

1.8. Requisitos previos / Prerequisites

The students taking this course should have learnt the contents of the mandatory courses: Water Pollution and Aquatic Bioindicators.
1.9. Requisitos mínimos de asistencia a las sesiones presenciales / Minimum attendance requirement

Attendance is mandatory, at a minimum of 80% of in-class sessions is mandatory. However, attendance to seminars and discussions, chats is also mandatory. Practicals will be done in laboratory and thus the attendance is mandatory.

1.10. Datos del equipo docente / Faculty data

Coordinador / Coordinator: Keila Martín Betancor  
Departamento de / Department of Biología  
Facultad / Faculty Ciencias  
Despacho - Módulo / Office - Module - B-006  
Teléfono / Phone: 34914978183  
Correo electrónico / Email: Keila.martin@uam.es  
Página web / Website:  
Horario de atención al alumnado / Office hours: 9-18

1.11. Objetivos del curso / Course objectives

The students in this course will understand the relevance of ecotoxicology within the Life Sciences framework. Students also will understand the fate including the biological transformations of pollutants in freshwater ecosystems. The students will understand the molecular and biochemical action mechanisms of toxicants typically found in freshwaters, understanding the lethality and chronicity concepts. At the end of the course students will be able of selecting the optimal ecotoxicological test for each situation, obtaining the EC, LC, LOEL, NOEL values or a polluted system or substance, producing an ecological interpretation of the obtained results.

In particular students will acquire next competences:
- Understand the contents in the course providing an opportunity of being original in the development and/or application of ideas
- Know how to apply the knowledge acquired and the capability of problem resolution in environments not completely known within a wider context but in the study area
- To know how to communicate the conclusions and knowledge and ultimate reasons supporting them to specialized and non-specialized audiences and a clear fashion
- They will acquire the learning skills allowing them to proceed in the learning pathway in an autonomous fashion
1.12. Contenidos del programa / Course contents

1. History and present situation of Aquatic ecotoxicology. REACH Directive
2. Chemical compounds in ecosystems.
3. Ecotoxicological exposure of biological systems
4. Subcellular and cellular effects. Effects on trophic webs. Sinergy and antagonisms
5. Community and ecosystem stress.
6. Methods in ecotoxicology: laboratory biotest, in situ methods in ecological studies
7. Key pollutants. Predictive ecotoxicology

1.13. Referencias de consulta / Course bibliography


2. Métodos docentes / Teaching methodology

This course consist of theoretical lessons where all the subjects detailed in the program are exposed and discussed. There will also be three days of laboratory practices where the students will put into practice the knowledge acquired comparing different standard ecotoxicology bioassays using organisms from different biological complexity: Bacteria (Vibrio), algae (Pseudokirchneriella) or metazoan (Daphnia), with a presumably polluted effluent.

Next teaching methodologies will be used:

Theoretical lessons supported with multimedia materials
Seminars and expert talks
Laboratory practices
Debate of presented materials

3. Tiempo de trabajo del estudiante / Student workload

<table>
<thead>
<tr>
<th></th>
<th>No. hours</th>
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<tbody>
<tr>
<td>Presential</td>
<td></td>
</tr>
<tr>
<td>Theoretical Lessons</td>
<td>25</td>
</tr>
<tr>
<td>Practical Activities</td>
<td>15</td>
</tr>
<tr>
<td>Work group Seminar</td>
<td>5</td>
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4. Métodos de evaluación y porcentaje en la calificación final / Evaluation procedures and weight of components in the final grade

Final score will be calculated assuming the credit load of each module and students assignments
Exam written report: 60 %
Seminar: 20 %
Practical Activities: 20 %

Every part (EXAM/SEMINAR/OTHER ACTIVITIES) should be passed independently for the final score in Aquatic Ecotoxicology.

Any student that participated less than 10% of evaluable activities will be qualified as “unevaluated”.

In the case that the student does not obtain the minimum requirements for passing the course (see evaluation section) can repeat the failed part at the end of the academic year (June-July) (“convocatoria extraordinaria”)

5. Cronograma* / Course calendar

<table>
<thead>
<tr>
<th>Semana aprox. Week</th>
<th>Contenido Contents</th>
<th>Horas presenciales Contact hours</th>
<th>Horas no presenciales Independent study time</th>
</tr>
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<tbody>
<tr>
<td>1st</td>
<td>Introductory sessions</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2nd</td>
<td>Concept sessions</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Practicals</td>
<td>12 (3 sessions)</td>
<td>10</td>
</tr>
<tr>
<td>3-4th</td>
<td>Discussion/ seminars</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>5th</td>
<td>Exam preparation and tutorials</td>
<td>10</td>
<td>20</td>
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* Tentative chronogram