Erasmus Mundus master's degree in Bio and Pharmaceutical Materials Science (BIOPHAM)

The Erasmus Mundus BIOPHAM master's degree (master's degree website) is a two-year programme taught entirely in English. The aim of the programme is to meet international demand for qualified graduates with high-level theoretical and applied training in materials science, the physics and chemistry of materials and the application of these disciplines to pharmaceuticals. BIOPHAM was developed by a consortium of four renowned European universities, and it benefits from the involvement of an extensive international network of companies, large-scale facilities and associated universities.

GENERAL DETAILS

Duration and start date
Two academic years, 120 ECTS credits

Timetable and delivery
Face-to-face

Language of instruction
English

Information on language use in the classroom and students' language rights.

ADMISSION

General requirements
Academic requirements for admission to master's degrees

Places
25

Pre-enrolment
To enrol for an interuniversity master's degree coordinated by a university other than the UPC, you must enrol through the coordinating university:
Université de Lille

PROFESSIONAL OPPORTUNITIES

Professional opportunities
The BIOPHAM master’s degree will help address a severe shortage of human resources in the research-based pharmaceutical sector, which includes academic centres, large pharmaceutical companies, SMEs, spin-offs, start-ups, contract research organisations and drug manufacturers.

Competencies

Generic competencies

Generic competencies are the skills that graduates acquire regardless of the specific course or field of study. The generic competencies established by the UPC are capacity for innovation and entrepreneurship, sustainability and social commitment, knowledge of a foreign language (preferably English), teamwork and proper use of information resources.

The BIOPHAM master's degree provide all students with various transversal skills such as competencies in entrepreneurship, project management, economic and strategic intelligence, marketing, bibliographical search and
synthesis. Students also have opportunities to acquire other soft skills (intercultural communication, research experience and scientific communication, national language of their host universities) enabling them to easily adapt to their future international professional environment.

**ORGANISATION: ACADEMIC CALENDAR AND REGULATIONS**

**European programme**  
Erasmus Mundus

**UPC school**  
Barcelona School of Telecommunications Engineering (ETSETB)

**Participating institutions**  
Universitat Politècnica de Catalunya (UPC)  
Università di Pisa  
Université de Lille - coordinating university  
University of Silesia in Katowice

**CURRICULUM**

<table>
<thead>
<tr>
<th>Subjects</th>
<th>ECTS credits</th>
<th>Type</th>
</tr>
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<tbody>
<tr>
<td><strong>FIRST SEMESTER</strong></td>
<td></td>
<td></td>
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<tr>
<td>Biopham Short Internship</td>
<td>5</td>
<td>Compulsory</td>
</tr>
<tr>
<td>Biophysical and Materials Science Characterisation</td>
<td>4</td>
<td>Optional</td>
</tr>
<tr>
<td>Complexity in Biological Systems</td>
<td>4</td>
<td>Optional</td>
</tr>
<tr>
<td>Large Facilities: Synchrotron and Neutron Sources</td>
<td>5</td>
<td>Compulsory</td>
</tr>
<tr>
<td>Machine Learning with Neural Networks</td>
<td>4</td>
<td>Optional</td>
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<tr>
<td>Materials Science of Drugs</td>
<td>4</td>
<td>Compulsory</td>
</tr>
<tr>
<td>Molecular and Soft Condensed Matter</td>
<td>4</td>
<td>Compulsory</td>
</tr>
<tr>
<td>Stochastic Methods for Optimization and Simulation</td>
<td>4</td>
<td>Optional</td>
</tr>
<tr>
<td>Master's Thesis</td>
<td>30</td>
<td>Project</td>
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December 2022. **UPC. Universitat Politècnica de Catalunya · BarcelonaTech**