Erasmus+

BIOPHAM

Bio & Pharmaceutical materials science EUROPEAN MASTER

IN SUPREMÆ DIGNITATIS 1343
UNIVERSITÀ DI PISA

UPC
UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

UNIWERSYTET ŚLĄSKI
W KATOWICACH

Université de Lille

http://master-biopham.eu

16/11/2021

BIOPHAM

Bio & Pharmaceutical materials science
EUROPEAN MASTER

4 PARTNER UNIVERSITIES

A unique international Master training in materials science (physics-chemistry of materials) focusing on pharmaceutical & biopharmaceutical materials

- 2-year international Master program (120 ECTS)
- All courses taught in English
- 3 Master's degrees granted
- Openings to PhD careers and/or highly qualified positions in industry worldwide. Opportunity to create a large network (Academic, Industry)
- Targeted students: Bachelor in Physics, Chemistry, Materials Science, Nanosciences,…
- Scholarships (1000 euros/month during 2 years)

BIOPHAM

Bio & Pharmaceutical materials science

EUROPEAN MASTER

This is the important word !

BIOPHAM is a Master in Materials Science

focusing on Pharmaceutical and Biopharmaceutical materials

BIOPHAM IS NOT a Master in: Biology, Biochemistry, Biotechnology, Biomedical sciences, Biomaterials, Pharmacy or Pharmaceutical sciences

(in which one may have some Materials science courses)

Examples of BIOPHAM courses

Condensed-Matter Physics & Chemistry

- Quantum matter & condensed matter physics
- Disordered and off-equilibrium systems
- Mechanical behaviour of materials
- Chemistry of soft matter
- Molecular and soft condensed matter
- Polymer science and engineering
- Thermodynamics and phase transformations
- Dynamics in the amorphous materials

(bio)-Materials & (bio-)Pharmaceutics

- Biomaterials
- Biomaterials toxicology
- Complexity in biophysics
- Molecular biophysics

- Materials science & pharmaceutical developments
- Thermodynamics and solid state physics of drugs
- Drug chemistry and technology of drug forms
- Pharmacology and Pharmacognosy

TOOLS & TECHNIQUES

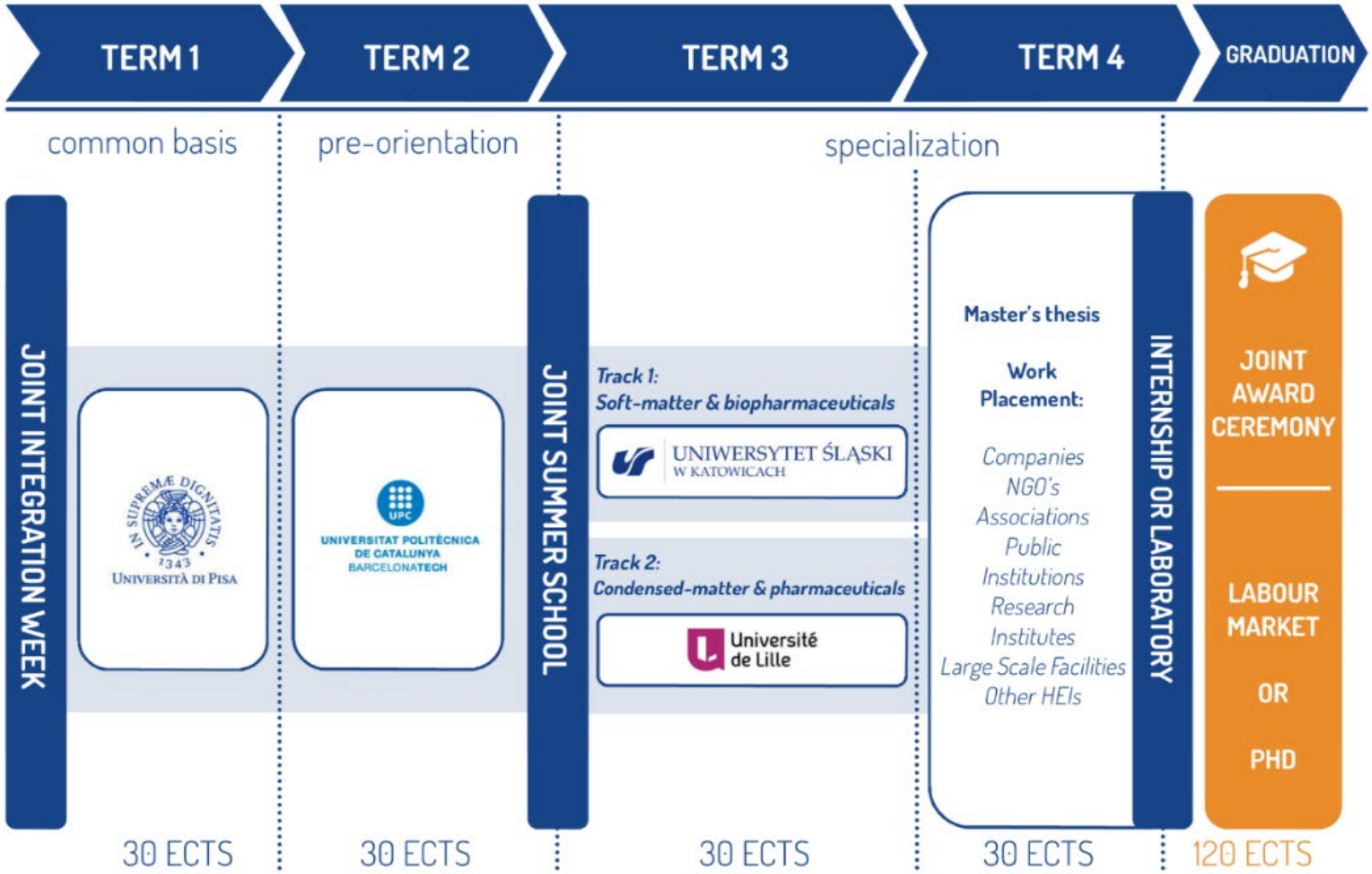
Numerical

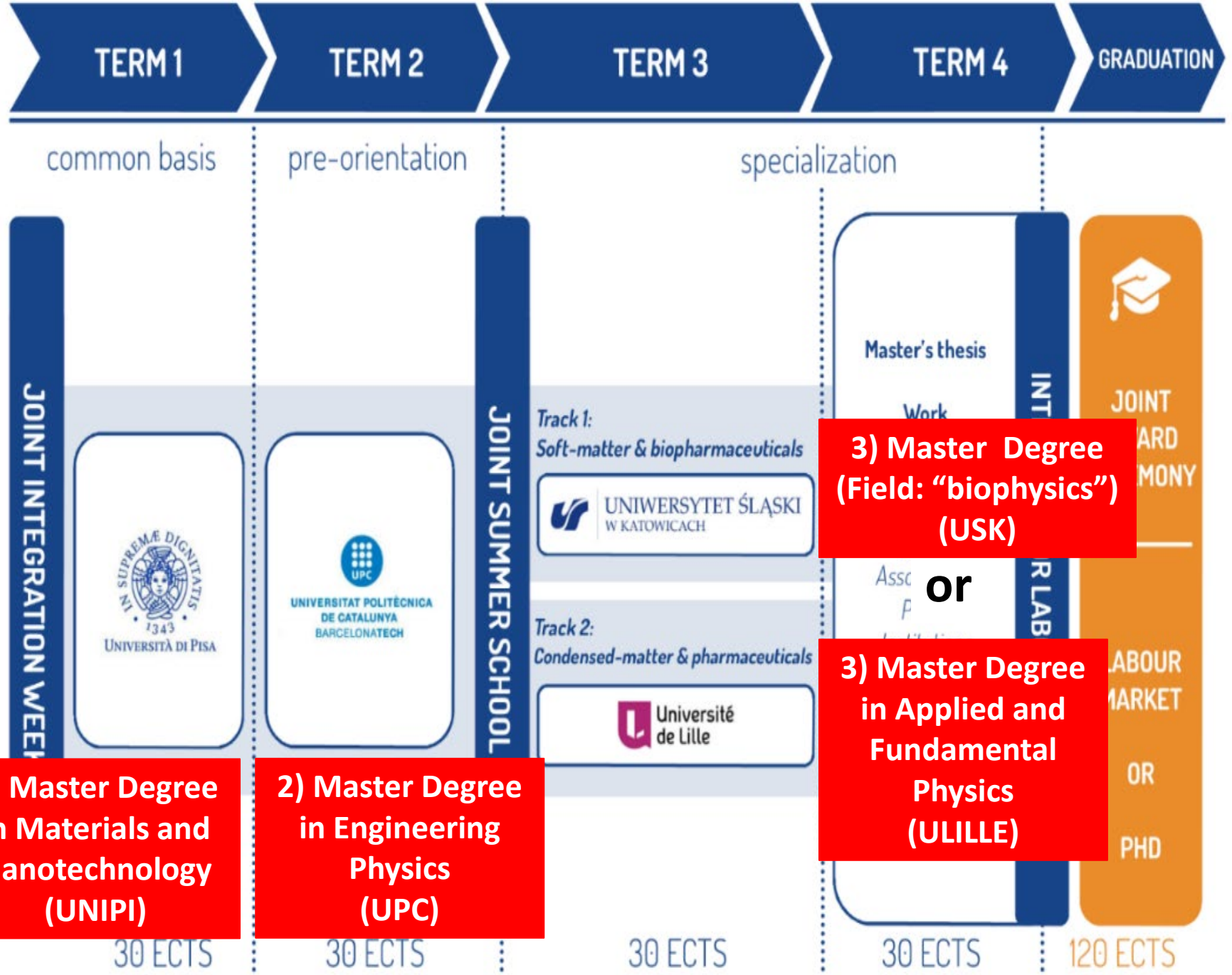
- Computational material science
- Machine learning with neural networks
- Stochastic methods for optimization/simulation
- Fundamentals of molecular modelling
- Atomistic modelling : from the gas phase to solids

Experimental

- Large facilities: synchrotron and neutron sources
- Physicochemical properties and characterization
- Application of vibrational spectroscopy in therapeutic substance studies
- Advanced experimental characterization methods

Mobility scheme





1) Master Degree in Materials and Nanotechnology (UNIPI)

2) Master Degree in Engineering Physics (UPC)

3) Master Degree (Field: "biophysics") (USK)

or

3) Master Degree in Applied and Fundamental Physics (ULILLE)

3 Official DIPLOMA Granted

+

A joint diploma supplement presenting the details of the BIOPHAM academic programme and academic achievement

BIOPHAM : A very large partnership

15 large and small companies

→ Big pharma, SME's, spin-offs, start-ups, contract research organizations

→ Active in basic research, drug discovery and design, early drug development, drug physical/chemical characterizations,…

6 large scale facilities (synchrotron and neutron sources): ESRF (France), ILL (France), PSI (Switzerland), ELETTRA (Italy), SESAME (Jordan), ALBA (Spain)

25 European and non-European associated Universities

- **Participate to the advisory board**
- **Specialized seminars & lectures**
- **Excursion to the company's premises**
- **Work placements – Short & Long internships**

Servier
AstraZeneca
Roquette
Sanofi
Eurofins Amatsigroup
Mjr Pharmajet GMBH
Cubic Pharmaceuticals
Novitom
Prolabin & Tefarm
Linari Engineering
Almirall
Devicare
Onyriq LABS, S.L
Eurasanté
Polepharma
CMAC Research Hub
Institut Max Von Laue - Paul Langevin (ILL)
Elettra Sincrotrone Trieste
SESAME (Synchrotron-light for experimental science and applications in the Middle East)
Paul Scherrer Institut (PSI)
European Synchrotron Radiation Facility (ESRF)
ALBA
University of Minnesota College of Pharmacy & Food Science and Nutrition Department
University of Wisconsin Madison

Purdue University
National Institute for Materials Science
Tokai University
UNSW Sydney
Monash University
Yanshan University
University of Calicut
University of Yaounde
Institute of solution chemistry of russian academy of sciences
Novosibirsk State University
Catholic University of Louvain
Ghent University
Universidade nova de Lisboa
University of East-Anglia
University of Greenwich
University College of London
Trinity College Dublin
University of Limerick - Solid State Pharmaceutical Cluster (SSPC)
Universidade de Sao Paulo
Sao Paulo State University
Federal University of Minas Gerais
University National of Cordoba
Universidad Nacional de la Plata