

Blended Intensive Programme (BIP)

Nano to Macro: Multiscale characterization of biomaterials

2026

Why this BIP

The BIP “Nano to Macro: Multiscale Characterization of Biomaterials” addresses interdisciplinary topics related to Global Health and Well-being by providing students with the tools to analyze and interpret the properties, limitations, and practical applications of biomaterials. So, with a strong emphasis on interactive and hands-on learning, students will encounter key principles from materials science, biology, and medicine, allowing them to see how innovations in biomaterials can shape the future of healthcare.

Partner Institutions

- University of Porto, Faculty of Engineering (Coordinator)
- Lund University
- University of Hamburg

Places available

Min.10 Max.25

Who can participate

Erasmus+ mobility students (2nd cycle) in the areas of Materials Engineering, Life Sciences, Biomedical Sciences and related fields; 2nd cycle (Master's) students in the areas of Materials Engineering, Life Sciences, Biomedical Sciences and related fields, from the University of Porto and partner institutions of the EUGLOH Alliance.

Fees

Course Certificate and student insurance – 10€.

Objectives

By the end of the continuing education course, students should be able to:

1. Understand and explain the fundamentals of different types of biomaterials, their properties, and interactions with biological systems.
2. Select and apply appropriate experimental techniques for nano, micro, and macroscopic characterization, interpreting data obtained through methods such as microscopy, spectroscopy, surface analysis, and mechanical testing.
3. Integrate and correlate results from different scales of analysis, also using modeling and simulation tools.
4. Critically analyze real-world case studies, proposing innovative solutions for biomedical applications, taking into account technical, clinical, regulatory, and ethical aspects.
5. Develop autonomy in learning and the ability to apply acquired knowledge to problem-solving in academic, industrial, and clinical contexts.

Duration and organization

- 1) Online training prior to the in-person week (7.5 hours of asynchronous contact)
- 2) One intensive in-person week – 17.5 hours

Programme

Onsite – 6th to 10th July

Online – 8th, 15 th, 22nd June (2h each session)

Applications

Call open from 18/03 to 31/03.

Apply here:

<https://forms.gle/dR9Kp6CzKjECQkvb7>

Results communication: 15/4

Seriation

The components considered in the selection are:

1. Erasmus+ mobility students – 5 points; Students from U.Porto and EUGLOH Alliance partner institutions – 4 points

If the number of Erasmus+ mobility student applications exceeds the number of available places, selection will be based on the following criteria:

1. Motivation and interest demonstrated in the application letter (60%). Evaluation from 1-12 points. Motivation to develop skills in the field of nanomaterials – up to 4 points; motivation to learn nanomaterial characterization techniques – up to 4 points; practical interest in nanomaterial characterization techniques – up to 4 points.

2. Relevant prior experience (e.g., participation in research projects, internships, extracurricular activities in the field) (40%). Evaluation from 1-8 points.

Participation in research projects - 1 point for each project; participation in internships - 1 point for each internship; Participation in extracurricular internships in the field – 1 point for each internship. The total score cannot exceed 8 points.

Certification

The workload of this course corresponds to 3 ECTS. The integration of the course in the student study plan or supplement of diploma will depend upon each home institution.

Financing

Students coming from European institutions should check with the International Offices of their higher education institutions (of origin) the possibility of applying to an Erasmus+ scholarship.