MASTER SCIENCES ET GÉNIE DES MATÉRIAUX

PARIS SCIENCES ET LETTRES

PARCOURS BioMaterials

INFORMATION

Teaching sites :

Heart of Paris

Language : English

PRE-REQUISITE :

Engineering and life-science students (materials science, physics, chemistry, medicine, pharmacy, dentistry, and biology)

The BioMaterials (BioMAT) track provides students in-depth knowledge of the understanding and use of biomaterials, from nanoscale biomolecules, such as proteins, lipids, and synthetic polymers to macroscale prostheses, orthesis, and implants. This education relies on a rich combination of high-level lectures, conferences and exchanges with invited experts and interdisciplinary group projects. From all these experiences, the students will learn how to apply their skills on health-related applications ranging from implant and tissue engineering through the modelling and characterization of biological materials to material design for therapeutics.

CAREER PROSPECTS

Career paths in academic research or industrial R&D environments.

PROGRAMME

5 core teaching units providing a broad overview of state-of-the-art knowledge of biomaterials science, tissue biology and biomechanics modelling and basic concepts in anatomy and research methodology

- Methodology
- Modeling and simulation in biomechanics
- Basics in tissue and cell biology
- Basics in biomaterial science
- Anatomy

4 teaching units 7 providing in-depth focus on biomaterials research

- Principles of tissue engineering
- Mechanical behavior of biological tissues
- Osteoarticular repair
- Handling of proteins and biomembranes
- Biointerfaces
- Cell mechanics, adhesion and motility
- Cardiovascular repair

Seminars and conferences

Interdisciplinary week

6-month **internship**

CONTACTS

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