RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

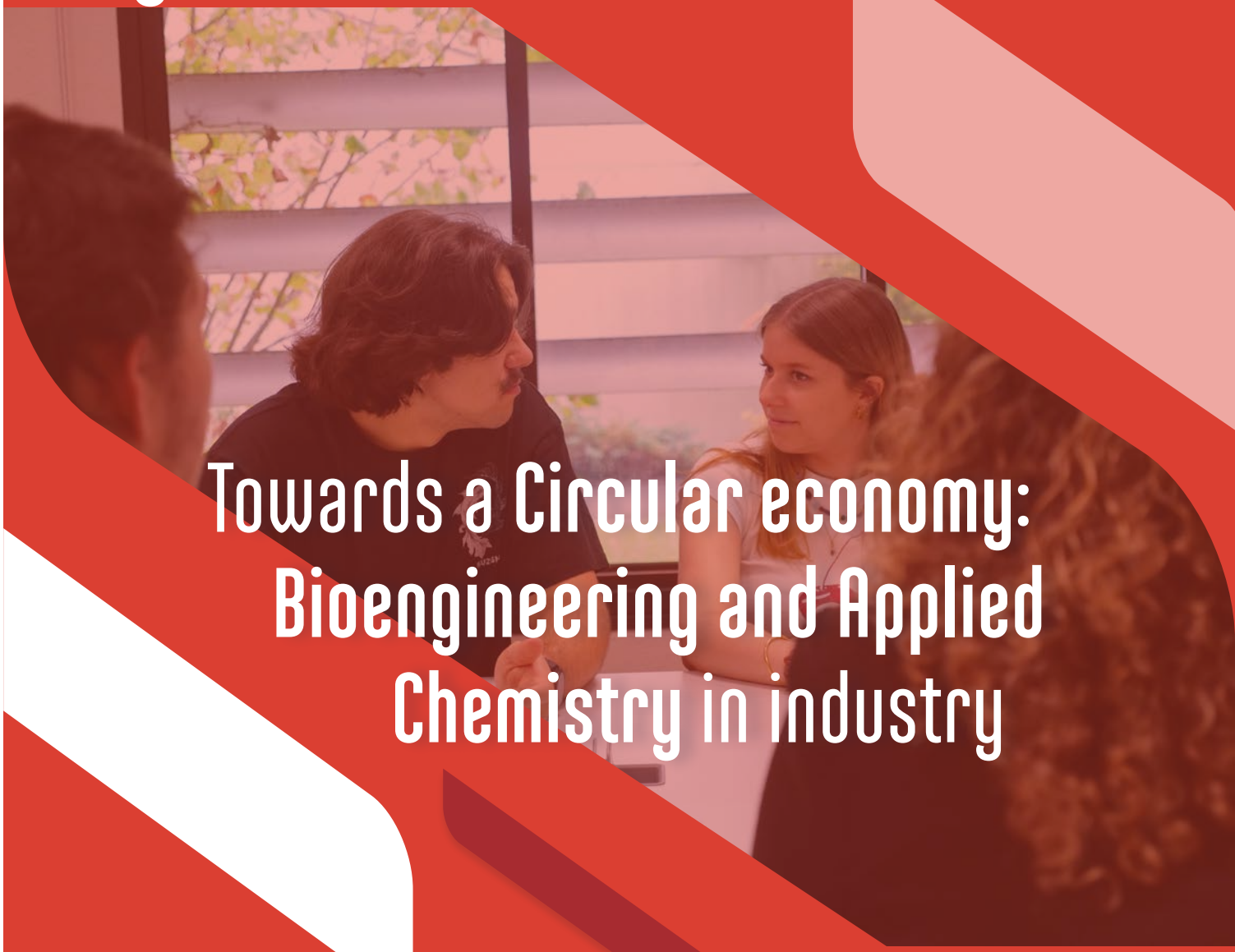
BORDEAUX INP Ensmac

BORDEAUX INP Enstbb

Graduate School of Material Sciences, Food Science and Chemistry

Graduate School of Biotechnologies

International Training Program



Towards a Circular economy: Bioengineering and Applied Chemistry in industry

International Training Program

BORDEAUX INP Ensmac

BORDEAUX INP Enstbb

Towards a **Circular Economy:** **Bioengineering** and **Applied Chemistry** in Industry

Three international training programs of 30 ECTS for 1 semester (September to January) with the possibility to complete them with a 6-month internship.

Training Program

Joint Courses [18 ECTS]

CALCULATION AND PROGRAMMING TOOLS [4 ECTS]	SCIENTIFIC AND TECHNICAL EXPERTISE [9 ECTS]	GENERAL ENGINEERING CULTURE [5 ECTS]
Artificial Intelligence Process Statistics and Data Analysis Design of Experiments	Tutored Business Project Integrated Practicals	Pharma-Biotech Sector Economy French Language

+ One course to choose [3 ECTS]

Analytical Chemistry

- Molecular and Macromolecular Synthesis
- Polymers
- Methods in Chemistry for Analysis and Characterization

NMT, AFPC, CBE

Life Cycle Assessment

- Water and Air pollution
- Theory for Life Cycle Assessment
- Practicals

NMT, AFPC

Basics in Biology for Chemists

- Structural Biochemistry
- Cellular Biology
- Molecular Genetics

NMT, CBE

+ One specialisation course to choose [9 ECTS]

Nano & Micro Technologies (NMT)

Applied Formulation of Polymers & Colloids (AFPC)

Chemistry & Bioengineering (CBE)

International Training Program

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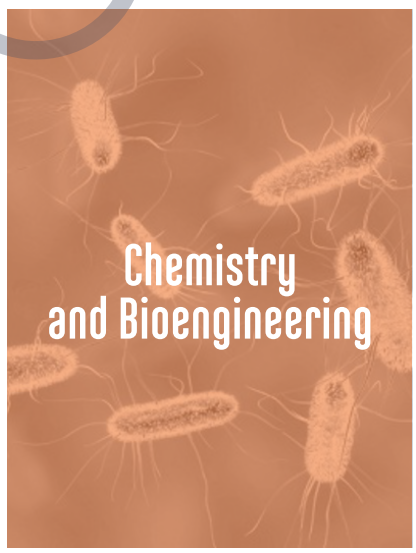
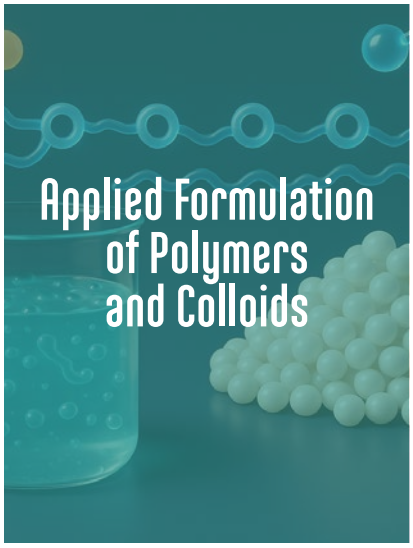
3 Specific Training Programs and Main Topics



Biotechnologies I Microorganisms I Biomass I Sustainable Chemistry I Biorefineries I Therapeutic antibodies I Plant-based Active Ingredients I Catalysis I Encapsulation I Biomimicry I Synthetic Biology



Formulation I Polymers and surfactants in solution and at interfaces I Sustainable chemistry I Ecodesign I Controlled polymerizations I Self-assembly I Latex and particles I Foams and emulsions I Hybrid materials and nanocomposites I Characterization of polymers and colloids

Near-field Scanning Techniques I Characterization Techniques I High-resolution Spectroscopy I Nano and Microfabrication Techniques I Engineering of Surfaces and Interfaces I Nanobiotechnologies I Inorganic I Polymer and Metal Nanoparticles I Nanotubes and Nanofibres I Nanostructured Materials and Applications I Toxicology of Nanomaterials and Nanotechnologies

International Training Program

BORDEAUX INP Ensmac

BORDEAUX INP Enstbb

BORDEAUX INP

9 graduate schools* in France

3500* students (selected through national competitive exam)

12% international students

22 programs* including 8 by apprenticeship

254 faculty members

11 joint research centers

140 partnerships worldwide

BORDEAUX INP Enstbb

ENSTBB (École Nationale Supérieure de Technologie des Biomolécules de Bordeaux) trains engineers and scientists specializing in **bioproduction, biotherapies, and biotechnology**. The program combines a **strong foundation in biology, bioprocess engineering, and analytical sciences with advanced training in the production, purification, and characterization of high-value biomolecules and cell-based therapies**. Supported by **cutting-edge research and close industry partnerships**, ENSTBB equips its graduates to meet the challenges of the pharmaceutical, cosmetics, industrial, and marine biotechnology sectors.

ENSTBB trains responsible and forward-thinking scientists and engineers, ready to tackle 21st-century challenges such as global health, biodiversity preservation, and sustainable energy. Through innovative and eco-friendly bioprocesses, they contribute to a more sustainable future.

BORDEAUX INP Ensmac

ENSMAC trains committed and responsible engineers in the fields of food science, physical chemistry and materials.

The courses, based on **research** (8 affiliated laboratories) and **innovation**, are resolutely focused on the challenges of **sustainable development and social responsibility**. They enable student engineers, who play a key role in their own training, to master the methods and tools needed to implement complex systems that address societal issues linked to the environmental, chemical, energy and food transitions that are underway.

"In short, we want them to have a good understanding of the world in which we live and evolve, and above all to be aware of the impact of human activity on our planet. As engineers, they have the key to innovating, taking action and preserving our common good." Isabelle Gosse, Director of ENSMAC.

Contact

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