

MSC BIOMASS AND WASTE FOR ENERGY AND MATERIALS - BIWEM

TYPE DE DIPLÔME

Master (LMD)

NIVEAU D'ÉTUDE VISÉ : BAC +5

ACCESSIBLE EN :

VAE

DOMAINE D'ÉTUDE : Environnement et énergie, Génie énergétique, Environnement, Génie des procédés

Domaine :

Objectifs

Given the current context of natural resource depletion, environmental and public health crises related to air and water pollution, pressures on energy supplies, we are facing a paradigm shift. The linear model "take, make, consume and dispose" is progressively being replaced by a 4R approach "repair, refurbish, reuse and recycle". The circular economy is becoming day after day a new development strategy for nations. Better eco-design, waste prevention and reuse bring significant net savings for businesses, while also reducing environmental harm and bringing new job opportunities. Turning biomass and waste into a valuable resource is at the heart of this strategy. Generating new materials, processes and markets requires global high-level training, including science, technology, regulatory knowledge, management and economics. All these innovative systems will emerge at the crossroads of process engineering, chemistry, fluid mechanics, thermal science, environmental sciences and economics as well as social sciences and humanities. BiWEM was created to satisfy the growing needs of this dynamic sector.

The objectives of BiWEM are to provide students with a sound theoretical and practical specialised knowledge in the field of biomass and waste processing. Students in the program will acquire the ability to design economically viable biological or thermochemical processes for the conversion of biomass and waste into new materials or energy carriers, within a sustainable development frame. Consequently, BiWEM focuses on chemical engineering but also includes courses on economics, international regulations and on certain areas of the social sciences and humanities.

ÉTABLISSEMENT(S)

ECOLE DES MINES D'ALBI-CARMAUX

LIEU(X) D'ENSEIGNEMENT

Albi

CONTACT

Parcours

Parcours Commun

Parcours Commun-Semestre-5

- Liste d'éléments pédagogiques (Obligatoire)
 - UE 1 - Economics and management of the environment
 - UE 2 - Feedstock and resources
 - UE 3 - Generic methods for engineering and process design
 - UE 4 - Transport phenomena
 - UE 5 - Case study - Part I
 - UE 6 - French language courses

Parcours Commun-Semestre-6

- Liste d'éléments pédagogiques (Obligatoire)
 - UE 7 - Ecotechnologies and innovation
 - UE 8 - Biomass and waste pre-processing
 - UE 9 - Biological and thermochemical reactors for renewable resource conversion
 - UE 10 - Case study - Part II
 - UE 5 - French language courses

Parcours Commun-Semestre-7

- Liste d'éléments pédagogiques (Obligatoire)
 - UE 12 Global environmental business
 - UE 2 - Gas and solid co-products post-processing
 - UE 3 - Process modeling, integration and assessment
 - UE 15 - Case study - Part III
 - UE 16 - French language courses

Parcours Commun-Semestre-8

- Liste d'éléments pédagogiques (Obligatoire)
 - UE 1 - Professional internship and thesis

Condition d'accès

Participants must hold a Bachelor of Science or Engineering degree, in the field of chemical engineering, clean technology, mechanical engineering, energy. Participants with some industrial experience are also welcome.

Public cible

01 Origine

Pré-requis nécessaires

01 prerequisites

Pré-requis recommandés

01 recommandations

Poursuite d'études

PhD

Perspectives professionnelles

- R&D Engineer
- Junior Project Engineer
- Process Engineer
- Design Engineer
- Exploitation engineer
- Environmental consultant

Contact

