



European Master in Biological
and Chemical Engineering for
a Sustainable Bioeconomy



Bioceb Master

Training talents in the bioeconomy
to support the ecological transition

More and more countries and regions around the world are relying on the bioeconomy to free themselves from fossil raw materials and reduce the contribution of human activities concerning the climate change. A cornerstone of the European Union's ecological strategy[1], the bioeconomy represents 14 million jobs [2]. This global boom requires the rational use of biological resources, i.e. use that is adapted to the local context, respects biodiversity and the social, economic and environmental principles of sustainable development.

Since 2020, the Master's programme - Bioceb[3] (European Master in Biological and Chemical Engineering for a Sustainable Bioeconomy) - has been training students within the challenges of the bioeconomy, with the aim of making sustainable use of natural resources to preserve biodiversity and promote a circular economy.

Coordinated by AgroParisTech, a component institution and founding member of Université Paris Saclay (ranked 16th in the world[4] and 11th in Agricultural Sciences[5] and at the heart of the innovative and technological effervescence of the Plateau de Saclay), the Master Bioceb has set itself the mission of transforming promising young talents from all over the world into true professionals in the bioeconomy, ready to meet the challenges of preserving resources.

[1] European Green Deal 2021

[2] Source : European Commission

[3] A 6-year European project funded with the support of the Erasmus + programme of the European Commission, Erasmus Mundus Joint Master Degrees action

[4] Academic Ranking of World Universities (ARWU) 2022

[5] Shanghai Ranking's Global of Academic Subjects 2022 Agricultural Sciences category



A tailor-made Master's degree to meet the challenges of the bioeconomy

Every year, between 20 and 25 students of at least 15 different nationalities join Bioceb. These students, who mainly come from biology, biotechnology, chemistry or environmental science backgrounds, wish to continue their training in the bioeconomy in order to focus their professional careers on :

- Reducing greenhouse gas emissions;
- Saving and managing organic resources;
- Reducing the impact of industrial processes on health.

The students are recruited from among the best in their universities and are highly motivated and willing to work in an intercultural environment. During their two-year curriculum, which is taught exclusively in English, they study in at least two different countries and in three of the five universities of the consortium: University of Liège (Belgium), Aalto University (Finland), Tallinn University of Technology (Estonia), University of Reims Champagne-Ardenne and AgroParisTech (France). At the end of Bioceb, students obtain a triple Master's degree from each university where they studied.

Bioceb in figures

- **44** nationalities represented since its creation in 2020
- **5** European partner universities
- **50%** students employed before graduating
- **Over 85%** placement rate 1 year after graduation
- **50%** continue on to doctoral studies



Training scientists to drive innovation



Interculturality



Bioceb's unique intercultural context enables students to develop many essential skills: adaptation, listening, agility, cooperation, respect and understanding complex situations. The mutual enrichment offered by the diversity of academic backgrounds and nationalities represented fosters all these skills, which will enable them to succeed in a variety of contexts (countries, structures, teams, etc.).

Interdisciplinarity



By its very nature, the bioeconomy requires an interdisciplinary approach. So, whatever their course of study, students have to acquire a solid foundation of knowledge in chemistry, biology, economics, environmental sciences and project management, which they learn to combine to solve practical problems. Once they have acquired this versatility, they are in a position to become outstanding professionals and researchers, ready to meet the challenges of the bioeconomy by applying the systemic approach taught.

Professionalisation



At the heart of Bioceb, the professionalisation of students is ensured by a strong emphasis on concrete case studies, project management training, site visits and work placements, as well as participation in international conferences and competitions. In 2023, a group of Bioceb students won the 1st prize in the European finals of the Bio-based Student Innovation Challenge, for their student project on the bioproduction of an aroma.



After completing their training, graduates successfully apply their skills, knowledge and know-how in the service of companies, research or consultancy in the bioeconomy sector.



Throughout the programme, and more particularly during the annual summer school, guest speakers from various sectors supplement the theoretical and scientific approach with field experience and raise students' awareness of entrepreneurship. By the end of the Bioceb programme, students will be ready to kick-off into the job market and put their knowledge to work in a wide range of organisations (large companies, SMEs, research institutes, R&D centres, start-ups, etc.), solving practical problems such as:

- the fractionation and recovery of lignocellulosic residues,
- the production of biogas,
- the development of biosourced cosmetic ingredients,
- the optimisation of micro-algae strains for biocontrol, the eco-design of construction materials, the recycling of plastics,
- the environmental assessment of supply chains, and more.



What they say



Diana Maria Garcia, originally from Colombia,
Currently Circular Ingredients Innovation Manager at L'Oréal (France).



Where are you from and what's your background?

« I am from Colombia. I studied chemical engineering at the National University of Colombia and before joining Bioceb, I worked 3 years in a pharmaceutical company in Clinical Data Management »

What position do you hold today?

« I am currently working at L'Oréal Groupe in France as Responsible for circular ingredients innovation (Chargée d'Innovation Ingrédients Circulaires). I am a member of the R&I team working on sourcing more sustainable ingredients to reach our sustainability program goals (L'Oréal for the future). For instance, by 2030, 95% of our ingredients in formula will be bio-based, derived from abundant minerals or circular processes. »

How has the Bioceb Master helped you?

« Bioceb allowed me to gain a holistic overview of how the bioeconomy can play a crucial role in achieving the Sustainable Development Goals. Learning about various topics and collaborating with multidisciplinary teams enabled me to identify my areas of professional preference. I wanted to study and work in Europe because it is home to leading companies, research centres, and start-ups engaged in bioprocesses, sustainability, and circularity. And for me, as a non-European, Bioceb was an essential step in enabling me to apply for and secure a job in those fields. »





Khaled Al-Shwafy, originally from Yemen,
Currently a doctoral student at the KU Leuven (Belgium)



Where are you from and what's your background?

« I am from Yemen. I studied chemical engineering and technology at Tianjin university in China. »

What position do you hold today?

« I'm doing a PhD at the KU Leuven in Belgium, funded by the Talent4BBI programme (Marie Skłodowska-Curie COFUND PhD programme funded by Horizon 2020, EU's key funding programme for research and innovation). I am working on a project to valorize the pulp from a novel catalytic fractionation technology into paper and packaging. I regularly visit SAPPI in Austria, the industrial partner in my project. »

How has the Bioceb Master's degree helped you?

« Bioceb was enriching experience for me that let me stand out among other candidates in the application process during the PhD application process. It deepened my knowledge about bioeconomy and sustainability. Bioceb assisted me to acquire the scientific tools needed to be an excellent researcher and leader in the bioeconomy. Bioceb covered variety of courses such as biorefinery, green chemistry, microbiology and sustainability. Moreover, I had practical experience through Green Line Project that enhanced my analytical skills and my critical way of thinking. In short, I believe Bioceb qualified me not just to be a researcher in bioeconomy but also as a young leader. »



WHY BECOME A SPONSOR?

More than ever, we need sponsors to ensure the continuation of Bioceb. The Master's programme is a European "Erasmus Mundus Joint Master Degree" project funded with support of the Erasmus + programme from the European Union. This funding is mainly used to offer grants to students. However, in accordance with the rules of Erasmus +, this funding only concerned four cohorts of students from 2020 to 2024.

The Bioceb consortium applied for a renewal of this European funding and is now waiting for the answer. If successful, the new grants will not be available until September 2025 at the earliest. **As a result, the next cohort of students from 2024 to 2026 will not be able to benefit from these grants, which are essential to attract excellent students from all over the world and continue to offer innovative teaching.**



SUPPORTING OUR TALENTS BY BECOMING A SPONSOR OF THE MASTER BIOCEB MEANS:

Implement your CSR policy

- Positioning yourselves as a responsible corporate citizen, working and committing yourselves to the development of the bioeconomy by supporting our young talents.
- Accelerating innovation by investing in people and betting on the future.

Boost your appeal as an employer brand and develop your network

- Attract ambitious and motivated new talents and promote your brand within AgroParisTech and more widely within the five European partner universities.
- Participate in a multi-partner project and seize the opportunity to work in synergy and network with complementary players.

Join a solid and ambitious project with a proven track record

- Benefit from the rigour, scientific credibility and academic excellence of AgroParisTech.
- Take advantage of the Master's four years' successful experience in hosting, training and supporting international talents in the bioeconomy.
- Believe in the AgroParisTech Foundation's twelve years of experience in collecting, redistributing and managing projects to ensure that funds are used properly and transparently.

Benefit from the tax deduction associated with sponsorship*

- Donations made as part of this corporate philanthropy programme, supported by the AgroParisTech Foundation, can be taxed at up to 60% for corporation tax purposes (up to a limit of €20,000 or 5% of the sponsoring company's turnover).
- Tax deductibility of time spent by employees in Bioceb as skills sponsorship, under the same conditions as financial donations.
- Be part of a general interest approach: the recent transformation of the AgroParisTech Foundation from an aegis to a recognised public interest foundation enables the Foundation and the projects it supports to fully consolidate their role, increase their visibility and develop their resources in the service of major challenges, in collaboration with all their partners.

* if your company is based in France

HOW TO BECOME A SPONSOR?



Becoming a sponsor means helping international students to realise their dreams by joining Bioceb.

Over a two-year period, our grants of between €15,000 and €22,000 enable our students to finance their tuition fees and living expenses for the duration of their studies.

Donation	After tax deduction 60% tax deduction	Number of grants
Between €15,000 and €22,000 euros	Between €6,000 and €8,800	1 grant
€110,000	€44,000 euros	approx. 5 grants
€220,000 euros	€88,000 euros	approx. 10 grants

FOR FURTHER INFORMATION PLEASE CONTACT

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