



# Postgraduate Programme “Bioeconomy in the Circular Economy (BIOCIRCE)”

Best practices & success cases to support development of education models

BIObec partners have identified innovative bioeconomy education models/pedagogies and/or best practice examples from industry/education that can inform and enhance the future Bio-Based Education Centres (BBECs) educational design and framework for delivery. These case studies draw on best practice examples from both bioeconomy education providers and outside organisations related to other sectors and industries.



# PROJECT PARTNERS



UNIVERSITY OF HOHENHEIM



UNIVERSITY OF EASTERN FINLAND



**MTU**

Ollscoil Teicneolaíochta na Mumhan  
Munster Technological University

**CTA**



Consiglio Nazionale delle Ricerche



**Food & Bio Cluster Denmark**

**AgroParisTech**  
Talents for a sustainable planet

**UAB**  
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**Pro Civis**  
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**Sustainable INNOVATIONS**



**IHE DELFT**

**WAGENINGEN**  
UNIVERSITY & RESEARCH

**FVA**  
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**IBE**



INSTYTUT BADAŃ EDUKACYJNYCH



**ZVT** | Agricultural Research, Ltd. Troubsko

## BIOBEC - Best practices & success cases

BIObec partners have gathered a series of best practice examples representing regional, national, European and International case studies and collaborations. These case studies include many examples from the bioeconomy sector, however, several case studies from other sectors have also enriched the depth and breadth of best practice including examples detailing thematics that focus on: AR/VR technology integration in education; mentoring programmes for AI graduates and best practice in networking the hydroenvironment.

Each case study has been classified under 11 thematic areas:

- 1** Pedagogies
- 2** University engagement and collaboration with industry
- 3** Lifelong learning and continuous personal development
- 4** Clusters/networks /partnerships
- 5** Research & Development supports
- 6** Funding & Investment networks
- 7** Enterprise Development supports
- 8** Mentoring Programmes (academic or industry)
- 9** Digital technologies and integrations
- 10** Diversity and inclusion practises
- 11** Engagement with civic society

## Understanding BIOBEC

The postgraduate programme “Bioeconomy in the Circular Economy (BIOCIRCE)” is jointly organised by 4 universities (University of Naples Federico II, University of Milano-Bicocca, University of Bologna, University of Turin), 4 companies (Intesa Sanpaolo, Novamont SpA, GFBiochemicals SpA, PTP Science Park of Lodi), and 2 Italian technological clusters (Cluster CLAN agri-food, Cluster SPRING).



It also collaborates with several companies and has signed Memorandums of Understanding with foreign organisations, such as Virginia Polytechnic Institute and State University and the Irish Bioeconomy Foundation.

### Who is participating in this programme?

Located in Milan, Naples, Turin, and Bologna, this programme is aimed mainly at two categories of participants, i.e., with either a scientific or social science background. It welcomes students from all different backgrounds<sup>1</sup>:

- Graduate scientists who want to pursue a career outside the lab
- Social scientists and business studies students who want to develop their interests in life science innovation
- People already working in biotechnology-related fields who wish to engage further

The program is designed for two groups of students that are professionals with either scientific or legal/economic backgrounds.



<sup>1</sup> <https://masterbiocirce.com/>

Over the years the share of the two groups is variable, but in recent years scientists seeking complementary training in business/economic subjects has prevailed.

Participants can access available scholarships.

## Programme description

As specified on the website of the programme, the main objectives of BIOCIRCE are:



The description of the programme's education offer is specified on the programme website as follows:

“The program [...] offers an extensive training program for professionals interested in working within the bio-based goods and services industry using biological resources and biotechnological processes. The program allows the professionals to go in depth in all the aspects related to the production and marketing sides of bio-based products, whilst using the latest technology. Students study the entire value chain of bio-based products: the production of raw materials in agricultural ecosystems in diverse climatic regions, the properties and supply logistics of biological resources, the biotechnological and industrial processes used to convert these resources into (new) bio-based products, and marketing and consumption of final products. Studying the entire value chain for bio-based products gives professionals the opportunity to deal with the environmental, social and economic dimensions of the bio-economy from a micro and a macro level perspective, including innovation, institutions and policies.



[...] graduates are exposed to different perspectives and points of view:



- Established producers seeking to introduce renewable resources, biotechnological processes, and their corresponding products onto the market
- Companies focusing on new biobased resources, processes, and products
- Actors attempting to gauge the need and acceptance of such products
- Organisations supporting the development of biobased value chains, e.g., through research and

The programme includes four compulsory modules (5 Credits each) given by the four participating Universities. Modules cover relevant scientific topics as well as economic and legal issues.

Students are required to attend 4 weeks of full-time lessons, each one taught in a different University, and a 6-months stage in one company or institution. Individual study time is required to prepare for the intermediate evaluation planned after each module and for preparing a final thesis work”.

Modules are covered based on their relevant fields, as specified on the programme website which reports as follows:

“Each module envisages teaching on scientific topics by staff members of the participating Universities, whilst Economic and regulatory aspects, as well as specific case studies, are covered by members of participating companies and associations”.

The teaching part carried out by companies is very important and usually linked to visits (altogether around half of the time, growing from year to year).

## What differentiates this programme from others?

Two characteristics are potentially relevant:



The flexibility of course contents, that each year is tailored to the background of participants



The close collaboration with industry in bringing cases of good practises and in allowing an industrial stage leading to the thesis.

The key impact of this programme is the bridge between master courses and job high-level professionals seeking a career in biobased industries or willing to be entrepreneurs in the field. This applies to the most innovative fields and innovation management itself.



### MORE INFORMATION

[BIOCIRCE](#)

