UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Basic of biobased processes and biorefineries

2122-DOTT-MOD2

Title

Basic of Biobased Processes and Biorefineires

Teacher(s)

Paola Branduardi

Language

English

Short description

Table of content:

- What is a biomass, how we classify biomasses and the concept of cascading;
- The concept of Biorefinery and examples of strategies at different TRL (technology readiness level);
- Biorefineries: Task 42, SWOT analysis and how the application of different biorefineries and value biomass chain can impact on matching the 17 SDGs;
- The power of microbial transformation into biobased processes: biodiversity, metabolic engineering and synthetic biology.

The goals of this module are:

-learning how biobased processes can favour the transition from linear to circular bioeconomy

-acquiring the concept of biorefinery and which are the sustainable resources of the Earth

-learning how bioprocesses can help to match principles and achievements of the 17 SDGs and of the Green Deal guidelines

Target audience: PhD students with not specific knowledge or skills in biotechnology principles, but that are interested in understanding how biobased processes can leverage the change of paradigm needed to match sustainability goals.

Participants (min/max): Max 30

The course style will be process-oriented and interactive. Theoretical in-puts will be followed by exercises, partner work, role-plays, case studies and group-work, when appropriate. Each lesson will have focus on specific topic, with hooks with all the others. The language and the level of details will be tailored to the specific needs of the actual audience; in case of lack of basic elements or knowledge, these will be provided either by the lec-turer or by providing PhD students with specific documents. During the les-sons participants will receive references to the literature needed and vison papers, as well as suggestions of relevant platforms and websites that can be useful.

CFU / Hours

CFU: 1 with in itinere evaluations

Hours: 8

Teaching period

11/01/22 - 9:30-11:30 am U6-27

24/01/22 - 9:30-11:30 am U6-27

01/02/22 - 2:30- 4:30 pm U1-06

15/02/22 – 9:30-11:30 am U6-27