

**2025, February to July**

**EQ027 - Prof<sup>a</sup> Telma T. Franco**

**COURSE OBJECTIVES:**

The course will provide insight in the advances in biobased production technology and sustainable process design.

**COURSE PROGRAM**

The course will start with an introduction of successful industrial business cases. Lectures to support the further understanding of advances in science and technology; the use of feedstock and sustainability, process integration and design will be provided.

**TOPICS AND CASES**

1. Replacement of petrochemical refineries, at least partially. Why?
2. Feedstocks. Sustainability and Biomass production.
3. What is the highest productivity of the target biomass? Sugar cane, eucalyptus and others.
4. Biomass characterization & Fractionation
5. Sustainable biofuels & Chemical Building Blocks
6. *Bio jet fuel by lipid, thermochemical and by biochemical conversion routes*
7. *High-impact plastics and Technological advances in bioplastics*
8. Green chemistry, systems integration, conceptual process design
9. *Sustainability and socio-economic impacts*
10. *Life Cycle Analysis: quantifying impact*
11. *Developing a business (plan)*
12. *Financing new biobased businesses*

*REFERENCES – List of references is delivered along the course;*