# Course for Ph.D. students
# 41th cycle (Nov 2025 – Oct 2028)

**Titles:**
**Valorization of agroindustrial residues through different biorefinery routes (1 ECTS)**

**Barbara Prandi**
Professor at the University of Parma

*Course language:* **English**

Period: II semester

🗓️ 02/09/2026
🗓️ 08/09/2026
🗓️ 24/09/2026
🕒 10 a.m. – 12 a.m.
📍 Room G, Pharmacy building

*To attend the course please contact:*
**Prof. Barbara Prandi (*barbara.prandi@unipr.it*)**

**Course description**

The course will explore the growing amount of **agro-industrial waste**, both animal and plant-based, with the opposing need for greater availability of nutrients, such as proteins, due to population growth. Different approaches to the **recovery and reuse** of waste, by-products or co-products will be illustrated, from the historical and traditional ones to the most recent and innovative ones, highlighting the strengths and weaknesses of each method. Among the wide range of available methods, the course will address those that can be defined as "**biorefinery**", i.e. a refinery that converts biomass into energy and other beneficial by-products (such as chemicals). The recovery of **macronutrients** (e.g. carbohydrates, lipids, and proteins) through different biorefinery methodologies will be illustrated, through the most significant examples, as well as that of **micronutrients** (e.g. minerals, vitamins) and other **compounds of interest** (e.g. flavors, pigments, and other substances).

Evaluation: YES, multiple choice quiz