

**Course offered for the PhD program
in Civil, Chemical and Environmental Engineering
a.y. 2024/2025 (cycle XL)**

(course is open for participation of students from other PhD cycles or programs)

1. Title

Processes for liquid and gaseous biofuels production

2. Course Objectives and Description

The course aims at providing notions to the future PhD students on the production of biofuels.

The course will include the following topics:

- biofuels: description of the main biofuels and food vs. fuels debate;
- processes for the production of bioethanol: alcoholic fermentation for the production of bioethanol;
- processes for the production of biodiesel: transesterification of vegetable oils from vegetable waste for the production of biodiesel and other biofuels;
- processes for the production of biogas from anaerobic digestion: production of bio-methane and carbon dioxide removal by phytodepuration as circular economy approaches;
- laboratory activities: realization in the Biotechnology laboratory of one of the processes analyzed during the course.

3. Course Organization

The course, organized into a single module, will consist of classroom lessons and practical laboratory training.

4. Teachers

The course teachers will be Prof. Attilio Converti and Dr. Martina Lenzuni. Dr. Lenzuni will be involved in practical laboratory training.

5. Duration and Credits

The course (16 hours) will consist of 4 lessons, 3 hours each, and a 4 hours tutorial in the laboratory, for a total of 3 credits.

6. Activation Mode and Teaching Period

The course will be held yearly if at least one student will be registered by simple contact with both teachers by email. The course will be held on June 2025. The exact dates of the lessons will be confirmed about one month before the beginning of the course.

7. Deadline for Registration

Registration to the course must be made before March 20th, 2025. Students are requested to inform teachers by e-mail (converti@unige.it; martina.lenzuni@cnr.it) about their registration.

8. Final Exam

The final exam will consist in an interview on the topics covered by the course. The students are requested to contact both teachers by email to establish the date of the exam.