About UniPD

The University of Padua is one of Europe's oldest and most prestigious seats of learning. As a multi-disciplinary institute of higher education, the University aims to provide its students with professional training and a solid cultural background. The qualification received from the University of Padua act as a symbol of the ambitious objectives respected and coveted by both students and employers alike.

Still today, the University of Padua holds some impressive numbers. With over 60,000 students and 2,200 educators within its 32 departments, the University also employees over 2,400 technical-administrative staff.

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For further details on the course, enrolment procedures and initiatives visit www.chimica.unipd.it/en/circulareconomy or scan the QR below:

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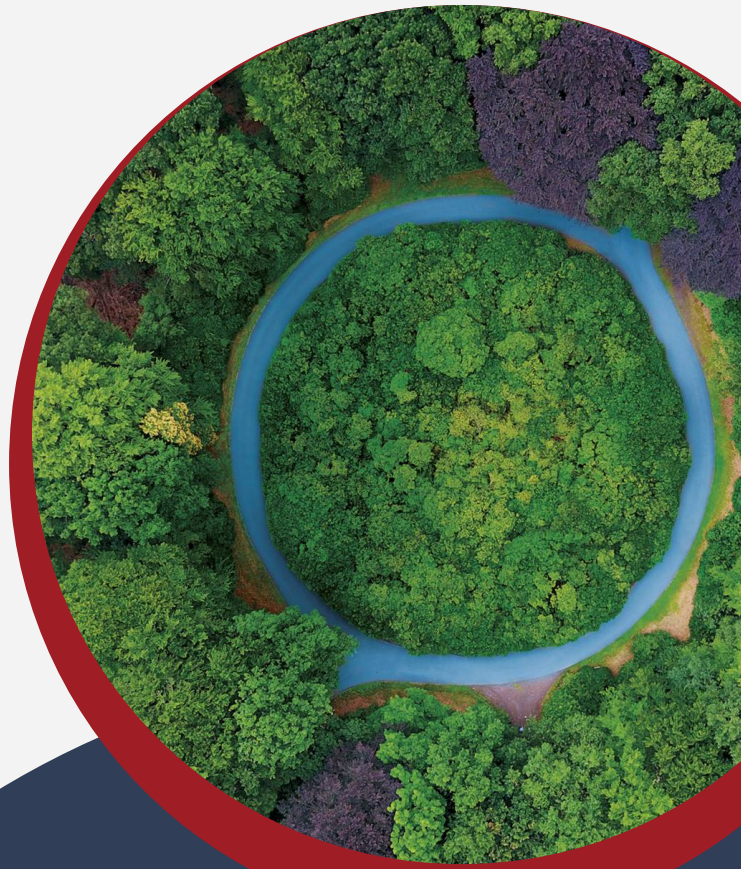
UNIVERSITÀ DEGLI STUDI DI PADOVA



Master's degree in

Sustainable Chemistry and Technologies for Circular Economy

University of Padua

The programme

The programme's objective is to provide students with cross-disciplinary knowledge, skills and competencies so that they can make independent decisions within a sustainable context based on circular economy principles.

Main features

The master's degree is a two-year programme with a workload of 120 ECTS divided as follows:

- 60 ECTS associated with teaching units offered throughout the first year and common to all students;
- 45 ECTS associated with one of the two curricula students can choose from, namely:
  - **Resources and product design and recycling**, focusing on material-related topics
  - **Energy conversion and storage**, focusing on energy-related topics and issues
- 15 ECTS associated with practical activities (internship) carried out in companies, research bodies, agencies or public administration bodies

At the end of their academic studies, students will have gained relevant expertise and skills to analyze a system's life cycle, and to design and implement specific CE projects.

Course outline

First year

Water resources management in circular economy
Renewable energy technologies
Operations and supply chain management
European Union environmental end energy law
Circular and sustainable waste management
Thermodynamics of processes and materials
Catalysis for circular economy
Green chemistry and innovative chemical process
Economics for circular economy

Second year

During their second year students are required to choose between two different specialisation paths*:

1) Resources and product design and recycling
Materials design and selection for circular economy
Sustainable mineral geo-resources and critical raw materials
New plastics economy: polymers, biopolymers and their recycling
Recycling and trasnformation of inorganic materials
Circularity in biomass productions

2) Energy conversion and storage
Biorefineries and sustainable energy production and storage for circular economy
Sustainability strategies and innovation management for circular economy
Life cycle assessment

*In addition to the courses already included in the two specialisation paths, two more units will have to be included in the student's curriculum.

Internship

The traineeship is offered as of second year and allows students to spend 4-6 months within companies, research bodies, agencies, or public administration facilities. The internship provides students with the opportunity to come into direct contact with industrial activities and apply their knowledge within a real context of implementation of circular economy.

Interactive seminars

In order to promote a close integration with the economic and productive context, interactive seminars will be held online every month, involving experts from the industrial sector and corporate consulting specialists. Seminars will last approximately two hours.

Summer School

The Summer School is offered yearly during the third week of July. Its aim is to provide participants with technical and soft skills related to aspects that are not dealt with in the degree programme, such as corporate environmental communication, bioeconomy, ecotoxicology, etc.

Summer schools involve the participation of both university teachers and external, qualified experts from national and international companies.It is open to both students and company employees.