



University of Camerino
School of Science
and Technology

CHEMISTRY AND ADVANCED CHEMICAL METHODOLOGIES

MASTER DEGREE

Second Cycle Degree

duration 2 years

ECTS credits 120

Campus Location Camerino

web site

www.chimica.unicam.it

*School of Science and Technology
Chemistry Division*

Director

prof. David Vitali

direttore.scienze@unicam.it

Course Coordinator

prof. Silvia Zamponi

silvia.zamponi@unicam.it

Delegates

Educational Guidance

dr. Paolo Conti

paolo.conti@unicam.it

Tutoring

dr. Cristina Cimorelli

cristina.cimorelli@unicam.it

International Mobility

prof. Maura Pellei

maura.pellei@unicam.it

Stage and Placement (Internship)

prof. Dennis Fiorini

dennis.fiorini@unicam.it

Educational Manager

dr. Anna Maria Santroni

annamaria.santroni@unicam.it

INTRODUCING THE MASTER

The Master of Science in Chemistry and Advanced Chemical Methodologies belongs to the Class LM-54 (Scienze Chimiche). It offers the possibility to enhance the chemistry knowledge, especially in the areas that characterize the chemical research in UNICAM. The course provides skills and fundamental knowledge in advanced and innovative chemistry areas, in order to offer an educational qualification competitive on the global labor market.

The Master of Science in Chemistry and Advanced Chemical Methodologies has the 'Chemistry Euromaster Certification, a label that assures an educational quality complying the European model. International agreements with the Instituto Superior Tecnico in Lisbon (Portugal) and the Universidad Nacional de Catamarca (Argentina) permit to our students to obtain the double degree by spending half of the course time at the partner institution.

The University of Camerino releases the Diploma Supplement to certify the skills attained by the graduate.

ADMITTANCE REQUIREMENTS

- Bachelor Degree that satisfies the requirements for access to University Master Degree courses
- List of subjects studied (transcript of records with grades obtained):
 - at least 24 ECTS of Mathematics, Physics and Informatics
 - 50 ECTS in Chemistry and Biology with adequate credits of laboratory practices.
- Level of language proficiency (strongly recommended): ENGLISH level B2 (Independent User)

A commission will assess the skills necessary to enroll.

Further information on admission rules, pre-admission deadline and other services at
<http://international.unicam.it>

CAREER OPPORTUNITIES

The master degree in Chemistry and Advanced Chemical Methodologies will prepare professionals able to work in labs, industries and public corporations at a manager level, in the following fields:

- public and private research facility;
- chemical industry and manufacturing;
- laboratories for analysis, monitoring and managing the environment and the waste cycle;
- energy production and energy storage industries;
- analytical chemistry laboratories for compliance testing and/or quality assurance;
- private professional practice

Labor statistics

The labor statistics carried out by Alma Laurea in 2018 shows that the unemployment rate of graduates of the LM54 Class of UNICAM, one year after graduation, is 8.3%; the comparable national figure is 10.9%. Only 7.1% of the graduates in Camerino are looking for work while the national average is 18.8%. The University of Camerino signed several agreements and conventions with many institutions, universities and companies both in Italy and abroad to facilitate the mobility of students and their interaction with the labor market.

Classes are held in English



COURSE STRUCTURE

There are two Semesters, from October to the end of January, and from March to mid-June. The Winter Exam Session is in February. The student can differentiate the training path according to his own interests, based on the didactic offer in the thematic areas of the most advanced research sectors, choosing among the proposed optional activities.

Main lines of research/study:

- Analytical and environmental chemistry.
- Inorganic and organic synthesis of molecules of pharmaceutical interest.
- Development of synthetic processes fulfilling the 'green Chemistry' requirements.
- Technological applications of polymers.
- Synthesis and test of advanced materials for the energy production and storage.
- Food chemistry and food analysis.
- Analytical methods development.

The degree program consists of four semesters. The student can differentiate the training path according to his own interests, based on the didactic offer in the thematic areas of the most advanced research sectors, choosing among the proposed optional activities.

I year, total 57 ECTS

Students will follow courses that characterize the degree class

I semester

Advanced Physical Chemistry	6
Laboratory of Environmental Chemistry and REACH certification	6
Environmental Chemistry	6
Spectroscopic methods	8

II semester

Advanced Analytical Chemistry and laboratory	8
Advanced Organic Chemistry	6
Laboratory of synthesis	6
Advanced Inorganic Chemistry	6
Optional activities of free choice	5

II year, total 63 ECTS

The student can differentiate the training path according to his own interests, based on the didactic offer in the thematic areas of the most advanced research sectors, choosing from a list of proposed optional activities

I semester

Optional activities picked from the proposed list	25
---	----

II semester

Chemistry project	10
Master Thesis and final elaborate	28

List of Optional activities:

Biomonitoring	5
Energy production and storage	5
Chemometrics	5
Environmental remediation	5
Green Chemistry	5
Bioorganic Industrial Synthesis	5
Polymer chemistry and applications	5
Organic Stereochemistry and mechanisms	5
Inorganic materials and applications	5
Organometallic Chemistry and catalysis	5
Supramolecular and Bioinorganic Chemistry	5
Structural Biology	5

The student can select the optional activities of free choice even among other active courses of the School of Science and Technology or of the other University Schools. The last semester is devoted to the thesis project that can be carried out in the UNICAM research laboratories or in affiliated companies and organizations. Some of the possible thesis topics are:

- chemiluminescent materials,
- radiopharmaceuticals,
- organic and inorganic catalysts,
- biologically active molecules,
- green chemistry, production and electrochemical storage of energy,
- nanomaterials and innovative materials,
- methods for the analytical determination of environmental and food contaminants,
- applications of natural dyes,
- ... and many others.

QUALITY ASSURANCE SYSTEM

UNICAM Quality Management System Certificate ISO 9001:2008 (from AFAQ-France, a French leader and one of the first certification bodies at the global level) guarantees students the quality of services provided.

The guarantee is via a rigorous analysis of internal organizational procedures and the prompt addressing of any weaknesses or shortcomings whether detected or reported by the students themselves.

The Quality Management System includes the following support services for students: orientation and guidance, mentoring, International mobility, Internships and communication. These integrate with and support the educational activities, so as to contribute to the complete training of the student.



For 2019, in the **U-MULTIRANK** international ranking, UNICAM was placed among the top 25 universities in the world in the area of international orientation, chosen among 1700 universities (of which 49 are Italian) from 96 countries.

The annual ranking takes into consideration the areas of greatest interest to students such as teaching and learning, knowledge transfer, orientation and research.



a.y. 2019/2020