CHEMISTRY AND ADVANCED CHEMICAL METHODOLOGIES

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course/Activity</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>I semester</td>
<td>Advanced Physical Chemistry</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Laboratory of Environmental Chemistry and</td>
<td>6</td>
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<td></td>
<td>REACH certification</td>
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<tr>
<td></td>
<td>Environmental Chemistry</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Spectroscopic methods</td>
<td>8</td>
</tr>
<tr>
<td>II semester</td>
<td>Advanced Analytical Chemistry and laboratory</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Advanced Organic Chemistry</td>
<td>6</td>
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<tr>
<td></td>
<td>Laboratory of synthesis</td>
<td>6</td>
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<tr>
<td></td>
<td>Advanced Inorganic Chemistry</td>
<td>6</td>
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<tr>
<td></td>
<td>Optional activities of free choice</td>
<td>5</td>
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</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course/Activity</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>I semester</td>
<td>Optional activities picked from the proposed list</td>
<td>25</td>
</tr>
<tr>
<td>II semester</td>
<td>Chemistry project</td>
<td>10</td>
</tr>
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<td></td>
<td>Master Thesis and final elaborate</td>
<td>28</td>
</tr>
</tbody>
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**List of Optional activities:**
- Biomonitoring
- Energy production and storage
- Chemometrics
- Environmental remediation
- Green Chemistry
- Bioorganic Industrial Synthesis
- Polymer chemistry and applications
- Organic Stereochemistry and mechanisms
- Inorganic materials and applications
- Organometallic Chemistry and catalysis
- Supramolecular and Bioinorganic Chemistry
- Structural Biology

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.