

Master's degree in chemistry – Curriculum in Bio- and Nanomaterials

Study plan for the students enrolled in the academic year 2026/2027

1st year

Compulsory courses

	CFU
Chemistry for Bio- and Nanomaterials	6
Laboratory for Bio- and Nanomaterials	9
Laboratory for Bio- and Functional Polymers	9

1 course of your choice from the following list (Analytical Chemistry)

	CFU
Chemosensors & biosensors	6
Experimental Design Techniques	6
Advanced analytical and Bioanalytical chemistry	6

1 course of your choice from the following list (Physical Chemistry)

	CFU
Characterization of Bio- and Nanomaterials	6
Physical chemistry of inorganic bio- and nanomaterials for biological applications	6

1 course of your choice from the following list (General and Inorganic Chemistry)

	CFU
Microspectroscopy applied to Bio- and Nanomaterials	6
Supramolecular devices	6

2 courses of your choice from the following list (Organic Chemistry)

	CFU
Artificial Intelligence for Drug Design and Beyond	6
Introduction to Molecular Computational Chemistry	6
Chiral Polymers for Nanotechnologies	6

1 elective course, preferably from the following list (not chosen before)

	CFU
Chemosensors & biosensors	6
Experimental Design Techniques	6
Advanced analytical and Bioanalytical chemistry	6
Characterization of Bio- and Nanomaterials	6
Physical chemistry of inorganic bio- and nanomaterials for biological applications	6
Artificial Intelligence for Drug Design and Beyond	6
Introduction to Molecular Computational Chemistry	6
Chiral Polymers for Nanotechnologies	6

2nd year

2 courses of your choice from the following list

	CFU
Nanomedicine in Regenerative Medicine	6
Mechano-bio-chemistry in Tissue Engineering	6
Innovability and Circular Entrepreneurship	6
Additive Manufacturing of Living Materials	6
Advanced Biocatalysis	6
Sustainable Materials for Circular Economy	6
Advanced Topics in Carbon-Based Materials	6
Methods and Materials for Restoration Chemistry	6
Bioinspired materials for Pharmaceutical applications	6
Cell Biology	6

1 elective course, preferably from the following list (not chosen before)

	CFU
Chemosensors & biosensors	6
Experimental Design Techniques	6
Advanced analytical and Bioanalytical chemistry	6
Characterization of Bio- and Nanomaterials	6
Physical chemistry of inorganic bio- and nanomaterials for biological applications	6
Artificial Intelligence for Drug Design and Beyond	6
Introduction to Molecular Computational Chemistry	6
Chiral Polymers for Nanotechnologies	6
Nanomedicine in Regenerative Medicine	6
Mechano-bio-chemistry in Tissue Engineering	6
Innovability and Circular Entrepreneurship	6
Additive Manufacturing of Living Materials	6
Advanced Biocatalysis	6
Sustainable Materials for Circular Economy	6
Advanced Topics in Carbon-Based Materials	6
Methods and Materials for Restoration Chemistry	6
Bioinspired materials for Pharmaceutical applications	6
Cell Biology	6

	CFU
Additional formative activities (additional language skills, including Italian language for foreign students)	3
Preparation of the Final Project and its defence (<i>Master's thesis</i>)	39

- **1 CFU = 8 hours of lectures or 12 hours of laboratory activities**