



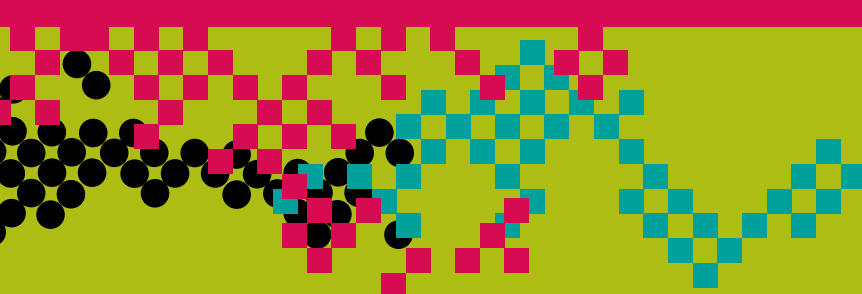
UNIVERSITÀ
DEGLI STUDI
FIRENZE

Scuola di Scienze
Matematiche
Fisiche e Naturali

*master of
science*

laurea
magistrale

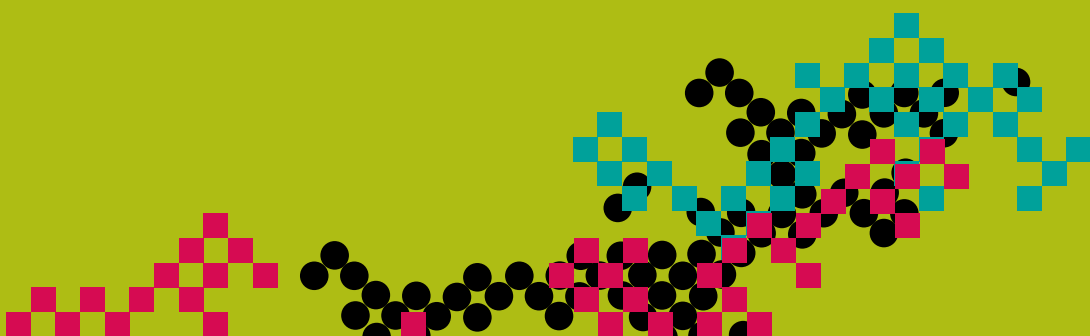
**advanced
molecular
sciences**



The University of Florence offers the new Second Cycle Degree Course **Advanced Molecular Sciences** (class Master Degree LM-54, Chemical Sciences). This Master is open to all International and Italian students that possess a BSc Degree in Chemistry or similar ones. Its goal is to train and educate the next generation of chemists on the cutting-edge research in Chemistry of Materials and Life Sciences, offering the students the opportunity to acquire knowledge and experience in the design, synthesis and characterization of complex systems and their application in fundamental research and in industrial development.

The course has a regular term of 2 years, it is based on a single curriculum and it will be conducted in English. Usually, the activity of the student corresponds to the achievement of 60 CFUs (or ECTS = European Credit Transfer and Accumulation System) per year. However, the student who got 120 CFU (or ECTS) by fulfilling all the requirements, can obtain the title before the two-year deadline.

“Advanced Molecular Sciences” is part of a project presented by the Department of Chemistry that received the status of a “Department of Excellence” by the Italian Government.





admission requirements

Education qualification

The access to the Second Cycle Degree Course (Master) in “Advanced Molecular Sciences”, class LM-54, is allowed to those who possess a Degree of the class L-27 (Chemical Sciences and Technologies), ex-DM 270/04, or a degree of the class 21 (Chemical Sciences and Technologies), ex-DM 509/99.

Curriculum requirements

The access is also allowed to those who have acquired:

- at least **20 CFUs** (or ECTS) in mathematical, physical and computer disciplines (SSD MAT/XX, FIS/XX, INF/01, ING-INF/05, all these abbreviations refers to Italian classification);
- at least **50 CFUs** (or ECTS) in chemical disciplines (SSD CHIM/XX), industrial and technological chemical disciplines (ING-IND/21, ING-IND/22, ING-IND/25) and biochemical disciplines (BIO/10, BIO/11, BIO/12) with activities, both theoretical and of laboratory, in each of the SSDs CHIM/01, CHIM/02, CHIM/03, CHIM/06;
- at least **15 CFUs** (or ECTS) between traineeship, professional activities, other activities, including the final exam and the knowledge of the English language (B2 level).

Suitable individual preparation

The suitable preparation of students who are in possession of the qualifications mentioned above will be assessed individually by a special Committee.

Elements of evaluation will be:

- the type of the examinations passed;
- the evaluation obtained on examinations;
- the type of final exam.

For each student an individual interview, possibly on-line for foreign students, will assess the applicant’s preparation. The Committee reserves the right to indicate additional obligations to be filled before releasing the expected clearance (nulla-osta) and enrolling in the Second Cycle degree Course (see also the General “Manifesto degli Studi” of the University of Florence). The formalities and times of the interview are published by the end of August in the Master’s website www.master-ams.unifi.it

The amount of fees to be paid is established according to the University Tax and Contributions Regulations issued annually. Bursaries are available for selected students for the payment of the tuition fees and/or for living expenses.



objectives

“Advanced Molecular Sciences” aims to train Graduates in Chemistry with high scientific and professional qualifications. The exclusive use of the English language, besides attracting students from other countries, aims to promote the formation of people suitable for entering the international work and research market as well as academic research centres.

The Master will offer the student the opportunity to acquire important knowledge and experience in the design, synthesis and characterization of complex chemical systems and their applications both in fundamental research and in industrial research and development. The training project is based on the internationally recognized expertise of the Professors of the Department of Chemistry in the main fields of **chemistry of materials and chemistry applied to life sciences**. The project is aimed at overcoming the traditional dichotomy between the teachings of chemistry of synthetic materials and chemistry of biological molecules and to offer **transversal skills** that, through a unitary vision, highlight the points of contact and synergies.

The Graduates will therefore have the skills to use the knowledge deriving from the two areas for the design and study of the complex systems that will constitute materials, bio pharmaceuticals, probes and theranostics of the next generation.

The molecular vision, characteristic of the chemical approach, will allow the development of new products and the precise control of their properties, providing effective responses to the needs of society in terms of new therapeutic approaches, materials, processes and analytical methods.

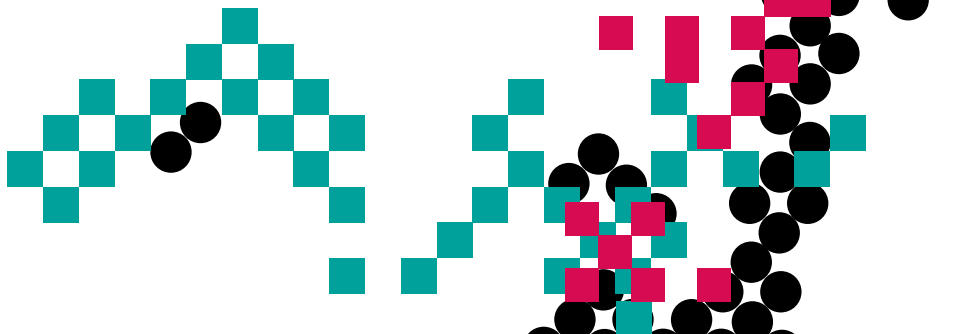
The training offer is divided into (i) a first block of teachings, common to all future Graduates, characterized by essential chemistry and biochemistry and (ii) a second block of optional teachings. The latter ones, supernumerary compared to the 12 CFUs (or ECTS) needed, will provide the students with the chance of building a personalized study plan, to further deepen the chemical and biochemical topics that mostly attracted them.



job opportunities

In addition to offer career opportunities similar to other degrees in Chemistry, “Advanced Molecular Sciences” will supply the graduates with a multidisciplinary expertise which will be a precious asset for carrying out PhD courses and for entering the job market worldwide. At the end of this Master Degree, in fact, the students will have acquired skills in the design, synthesis and characterization of novel materials and biological molecules. To this end, the course will also provide elements of other disciplines such as Biology, Medicine and Materials Sciences. The achieved competences and skills will cover the study of inorganic and organic materials, small bioactive molecules, complex biological macromolecules and diagnostic tools. The graduates will gain the ability to deal with any kind of synthetic, diagnostic and characterization task they will need in their professional life.

The Graduate thus formed will have a **multidisciplinary profile**, suitable for dealing with the requests coming from both industrial and research worlds. The didactic offer will be aimed at training both highly specialized professionals to be included in the business world and future researchers who, thanks to a solid and advanced scientific preparation, will be able to face further training courses at PhD and Master levels in Molecular Sciences.



internship and stage

The School of Mathematical Physical and Natural Sciences (SMFN) manages student (curricular) internships and recent graduates internships.

The internship / job placement delegate is responsible for verifying the quality of the internships offered to students, to arouse new proposals internship from companies, and to coordinate the job placement actions of the Course of Studies with the SMFN School and with the Central Office of the University.

The Office provides detailed information to aspirant trainees for the choice of the Host, identified through the University Service St@ge online. The Office provides also information on the procedures to follow for activation of the internship and how to carry out it.

6 ECTS of "Advanced Molecular Sciences" are reserved for training internships at University laboratories or industries, public and private Institutions affiliated with the University.

Students wishing to spend a period of study abroad under the Erasmus Plus program will have to submit the Study Plan to the Master Course before leaving. The person in charge for the Erasmus Plus program at the Department of Chemistry is Prof. Anna Maria Papini (email: anamaria.papini@unifi.it).

Apprenticeships in organisations, companies or facilities outside the University are highly recommended. Alternatively, the student has the possibility to carry out internal training activities.

Internal training activities are carried out within University Departments and do not fall under the category of apprenticeships, but may be recognised by the Board of Studies for the purposes of obtaining the credits envisaged for curricular apprenticeships.

Please note that in order to carry out the internal training activity, it is necessary to have taken the Safety Courses and follow the procedure adopted by the Course of Studies.



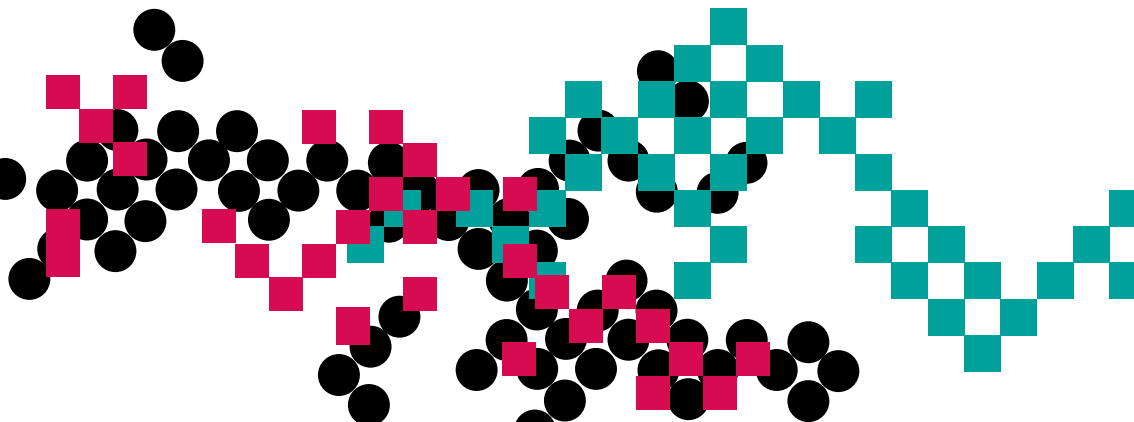
postgraduate education

The Master's degree program in "Advanced Molecular Sciences" has the goal of providing the student with a global vision in the chemistry of materials and the chemistry of living systems. The course shows how the knowledge in the two areas can be used in synergy to offer new possibilities for scientific and technological progress. Graduates will acquire complete mastery of the scientific method, will learn to use the most modern instrumental and data analysis techniques and will be able to work with ample autonomy.

At the end of the Master course the Graduates will possess the skills that derive from the two areas for the design and study of the complex systems including materials, bio-pharmaceuticals, probes and theranostics of the next generation.

The Graduate thus formed will have a multidisciplinary profile, suitable for dealing with the requests coming from both industrial and research worlds. The offered education will be aimed at training both highly specialized professionals to be included in the business world and future researchers who, thanks to a solid and advanced scientific preparation, will be able to face further training courses at PhD and Master levels in Molecular Sciences.

The experience and knowledge acquired by "Advanced Molecular Sciences" graduate students will be a precious asset for an advanced career in industry and academia, being especially prepared to face an international context.





locations and contacts

Dipartimento di Chimica “Ugo Schiff”

via della Lastruccia, 3/13 | Sesto Fiorentino

headquarters

master-ams@chim.unifi.it

Classrooms

classroom building

Polo Scientifico e Tecnologico

via Bernardini, 6 | Sesto Fiorentino

Department of Chemistry “Ugo Schiff”

via della Lastruccia, 3/13 | Sesto Fiorentino

Science School contact

scuola@scienze.unifi.it

student guidance

orientamento@scienze.unifi.it

website

www.master-ams.unifi.it

Students Administration Office

viale Morgagni, 40/44 | Firenze

segreteriastudenti.morgagni@unifi.it

Orientation and welcome desk

O.A.S.I.

via G. Bernardini, 6 | Sesto Fiorentino

segreteriastudenti.morgagni@unifi.it

