UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2018/19
MASTER DEGREE
Chemistry (Classe LM-54)
Enrolled from 2013/14 academic year

HEADING

Degree classification - Denomination and code:	LM-54 Chemistry
Degree title:	Dottore Magistrale
Length of course:	2 years
Credits required for admission:	180
Total number of credits required to complete programme:	120
Years of course currently available:	1st , 2nd
Access procedures:	Open, subject to completion of self-assessment test prior to enrolment
Course code:	F5Y

PERSONS/ROLES

Head of Study Programme

Prof.ssa Laura Maria Raimondi

Tutors - Faculty

Prof. Emma Gallo, Emanuela Licandro, Maurizio Sironi

Degree Course website

http://www.ccdchim.unimi.it

Via Golgi, 19 - 20133 MILANO http://www.chimica.unimi.it

Via Celoria, 22 - 20133 MILANO lunedì - mercoledì - venerdì dalle 9 alle 12 e martedì - giovedì dalle 13.30 alle 15.30 http://www.unimi.it/studenti/segreterie/773.htm http://www.unimi.infostudente.it

http://www.unimi.it/studenti/matricole/77648.htm

Prof. Fabio Ragaini

Office for Didactic, Department of Chemistry

Via Golgi 19 - 20133 MILANO Phone 02 50314419 dalle ore 10 alle ore 12 dal lunedì al venerdì, in altri orari previo appuntamento http://users.unimi.it/chimp Email: didattica.dipchi@unimi.it - skype: segreteriachimica

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The Master in Chemical Sciences will be awarded to students who have shown:

• To have knowledge and understanding that is founded upon and extends that of the Bachelor's level in Chemistry, and that provides a basis for originality in developing and applying ideas within a research context;

• To have competences which fit them for employment as professional chemists in chemical and related industries or in public service;

• To have attained a standard of knowledge and competence which will give them access to third cycle course units or degree programmes.

Such graduates will:

• have the ability to apply their knowledge and understanding, and problem solving abilities, in new or unfamiliar environments within broader (or multidisciplinary) contexts related to chemical sciences;

• have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on ethical responsibilities linked to the application of their knowledge and judgements;

• have the ability to communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously;

• have developed those learning skills that will allow them to continue to study in a manner that may be largely self-directed or autonomous, and to take responsibility for their own professional development.

Professional profile and employment opportunities

The students with the degree in Chemical Sciences would be entitled to work in public and private-owned laboratories as

highly qualified scientists. They could supervise the planning, production and characterization of new products and/or new materials, collaborate in the development of novel technologies, elaborate reports, handle and present chemical information. They could find positions in chemical industry, especially in pharmaceutical and fine chemicals companies, but also in the agrochemical, cosmetic and food chemistry, or teach Chemistry in High Schools.
They can also apply for Doctorate programmes, preferentially in Chemical Sciences, in our University or abroad. On average, around 25% of our students do so, after receiving the degree in Chemical Sciences.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports the international mobility of its students, offering them the opportunity to spend periods of study and training abroad, a unique opportunity to enrich their curriculum in an international context.

How to participate in Erasmus mobility programs

To gain access to mobility programs for study purposes, lasting 3-12 months, the enrolled students of the University of Milan must attend a public selection that starts usually around the month of February each year through the presentation of specific competition announcements, which contain information on available destinations, respective duration of the mobility, requirements and deadlines for submitting the online application.

The selection, aimed at evaluating the proposed study abroad program of the candidate, knowledge of a foreign language, especially when this is a preferential requirement, and the motivations behind the request, is performed by specially constituted commissions.

Each year, before the expiry of the competition announcements, the University organises information sessions for the specific study course or groups of study courses, in order to illustrate to students the opportunities and participation rules.

To finance stays abroad under the Erasmus + program, the European Union assigns to the selected students a scholarship that - while not covering the full cost of living abroad - is a useful contribution for additional costs as travel costs or greater cost of living in the country of destination.

The monthly amount of the communitarian scholarship is established annually at national level; additional contributions may be provided to students with disabilities.

In order to enable students in economic disadvantaged conditions to participate in Erasmus+ program, the University of Milan assigns further additional contributions; amount of this contributions and criteria for assigning them are established from year to year.

The University of Milan promotes the linguistic preparation of students selected for mobility programs, organising every year intensive courses in the following languages: English, French, German and Spanish.

The University in order to facilitate the organisation of the stay abroad and to guide students in choosing their destination offers a specific support service.

More information in Italian are available on www.unimi.it > Studenti > Studiare all¿estero > Erasmus+

For assistance please contact:
Ufficio Accordi e relazioni internazionali
via Festa del Perdono 7 (ground floor)
Tel. 02 503 13501-12589-13495-13502
Fax 02 503 13503
E-mail: mobility.out@unimi.it
Desk opening hour: Monday-friday 9 - 12

1st COURSE YEAR Elective courses		
Inorganic chemistry A	9	CHIM/03
Inorganic Chemistry B	9	CHIM/03
Organic chemistry A	9	CHIM/06
Organic chemistry B	9	CHIM/06
Physical chemistry A	9	CHIM/02
Physical chemistry B	9	CHIM/02
Chemical Safety	6	IUS/07
Mathematical methods applied to chemistry	6	(6) MAT/09, (6) MAT/01, (6) MAT/02, (6) MAT/03, (6) MAT/04, (6) MAT/05, (6) MAT/06, (6) MAT/07, (6) MAT/08

Medicinal chemistry		6	CHIM/08
Patents and Management of Innovation		6	SECS-P/07
Programming C		6	INF/01

2nd COURSE YEAR Core/compulsory courses/activities common

Learning activity		Ects	Sector
Thesis work and Final dissertation		39	NA
	Total compulsory credits	39	

Elective courses

COURSE YEAR UNDEFINED Core/compulsory courses/activities common

Learning activity		Ects	Sector
Advanced english		3	L-LIN/12
	Total compulsory credits	3	

Further elective courses

Advanced electroanalytical chemistry	6	CHIM/01
Advanced methods in organic synthesis	6	CHIM/06
Advanced physics methods in organic chemistry	6	CHIM/06
Bioinorganic chemistry	6	CHIM/03
Bioorganic chemistry	6	CHIM/06
Catalitic Methodologies in organic chemistry	6	CHIM/06
Catalytic processes	6	CHIM/02
Chemistry of heterocyclic compounds	6	CHIM/06
Chemistry of organic natural substances	6	CHIM/06
Crystal Chemistry	6	CHIM/02
Databases and Cheminformatics Fundamentals	6	CHIM/06
Electrochemistry	6	CHIM/02
Environmental analytical chemistry	6	CHIM/01
Environmental chemistry	6	CHIM/12
Environmental elettrochemistry	6	CHIM/02
Homogeneous catalysis	6	CHIM/03
Inorganic crystal chemistry	6	CHIM/03
Nanoparticles: Chemistry and Applications	6	CHIM/06
Organic stereochemistry	6	CHIM/06
Organometallic chemistry	6	CHIM/03
Photochemistry	6	CHIM/02
Photoluminescence and magnetic resonance: applications in organometallic and inorganic chemistry	6	CHIM/01
Physical chemistry of disperse systems and of interfaces	6	CHIM/02
Physical chemistry of solid state and surface	6	CHIM/02
Physico-chemical methods of investigation applied to molecular systems and nanostructured	6	CHIM/02
Quantum chemistry	6	CHIM/02
Simulation modeling of biomolecules	6	CHIM/02
Solid state chemistry	6	CHIM/03
Special synthesis techniques in organic chemistry	6	CHIM/06
Structural biology and enzymology	6	BIO/10
Structural chemistry	6	CHIM/03
Supramolecular chemistry	6	CHIM/03
Synthesis and applications of inorganic materials	6	CHIM/03
Theoretical chemistry	6	CHIM/02