



**UNIVERSITÀ DEGLI STUDI
DELL'INSUBRIA**

**DEPARTMENT OF
SCIENCE AND HIGH TECHNOLOGY**

**DESCRIPTION OF THE MASTER'S DEGREE COURSE (COURSE RULES)
IN CHEMISTRY
2024/2025**



I - GENERAL INFORMATION

NAME OF THE DEGREE COURSE	Chemistry
CLASS	LM-54
TYPE	2-year degree
LOCATION	Como
INTERNET ADDRESS	<p>Information on the educational goals of the Degree Course, employment opportunities, admission requirements, admission procedures, expected learning outcomes, educational paths/study plans, final examination, are provided in the Degree Course Annual Report (SUA-CdS), published on the pertinent web page at the following address:</p> <p>https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/chimica</p>
DEPARTMENT	<p>Dipartimento di Scienza e Alta Tecnologia, DiSAT</p> <p>https://www.uninsubria.it/rubrica/dipartimento-di-scienza-e-alta-tecnologia</p>
COORDINATOR	Professor Simona Galli
COURSE TEACHING SECRETARIAT	<p>https://www.uninsubria.it/node/620</p>
CALENDAR OF TEACHING ACTIVITIES	<p><u>1st semester:</u> from 23/09/2024 to 17/01/2025</p> <p><u>2nd semester:</u> from 17/02/2025 to 13/06/2025</p> <p><u>Exam session:</u> from 1/12/2024 to 31/3/2026</p> <p>A list of teaching activities interruptions and/or University facilities closures, as approved by the Academic Ruling Bodies, can be found on the University Teaching Calendar at the following address:</p> <p>https://www.uninsubria.it/ateneo/sedi-e-orari/calendario-accademico/calendario-didattico</p>
FURTHER INFORMATION	<ul style="list-style-type: none">• ACCESS TO THE DEGREE COURSE: Open• ISSUING OF DOUBLE DEGREES: Not available• TEACHING LANGUAGE: Italian• PRESENCE OF PATHS/CURRICULA: No paths or curricula are present
VERIFICATION OF THE POSSESSION OF CURRICULAR REQUIREMENTS AND THE ADEQUACY OF PERSONAL PREPARATION	<p>Holders of degrees belonging to the Degrees class in Chemical Sciences and Technologies (L-27, ex. DM 270/04) or the corresponding Degree class 21 (ex. DM 509/99) are admissible to the Master's Degree Course in Chemistry. Holders of a degree in other classes obtained from national universities, or of qualifications obtained abroad, may also access the Degree Course if deemed suitable by a panel composed of, at least, four Board of Studies members belonging to the four areas of Analytical Chemistry, Physical Chemistry, Inorganic Chemistry, and Organic Chemistry. To verify the fulfilment of the</p>



	<p>curricular requirements, the panel will evaluate the congruence among the topics of the applicants' previous career with respect to those of the subdisciplines considered fundamental for a L-27 Degree Course.</p> <p>More specifically, the applicants' previous career must fulfill the following requirements:</p> <ul style="list-style-type: none">- at least 12 CFU in mathematical and physical disciplines;- at least 80 CFU in the subdisciplines considered fundamental for the L-27 class, as described at the following address: https://www.mur.gov.it/sites/default/files/2023-12/Decreto%20Ministeriale%20n.%201648%20del%2019-12-2023%20-%20allegato.pdf <p>The panel will also assess the knowledge and capabilities of students interested in enrolling in the Master's Degree Course <i>via</i> an interview on topics related to the key subdisciplines of a class L-27 Degree Course. The interview will also verify the applicants' ability to orally convey information using an adequate disciplinary and technical vocabulary. The ability of understanding a university-level scientific textbook in English will also be evaluated.</p> <p>If the interview revealed the for an integration on topics of key class L-27 subdisciplines, the applicants would be asked to enroll in specific lecture courses delivered in the Degree Course in Chemistry and Industrial Chemistry, to acquire a minimum number of CFU relevant to each subdiscipline. Following a positive outcome for the associated exams, the panel would reconsider the applicants' eligibility for the Master's Degree Course.</p>
<p>CAREER GUIDANCE, ENROLLMENT PROCEDURES AND OTHER ADMINISTRATIVE ASPECTS</p>	<p><i>Career guidance</i></p> <p>Useful information for a conscious choice of a Master's Degree Course can be found on the University website at the following address: https://www.uninsubria.it/formazione/consigli-e-risorse-utili/orientamento</p> <p>For specific information on the Master's Degree Course in Chemistry, please refer to the web pages on the latter at the following address: https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/chimica</p> <p><i>Enrollment procedures</i></p> <p>For enrollment in open-access Master's Degree Courses, please refer to the University website at the following address: https://www.uninsubria.it/node/2082</p> <p><i>Infostudent Service</i></p> <p>The INFOSTUDENTI <i>web</i> application offers a communication channel for enrolled and potential students to contact University Offices (Students Secretariats, Teaching Secretariats, Right to Education and Student Services Office, Career Guidance and Placement Office, International Relations Office) for administratively relevant inquires. The application also allows one to send relevant documents, as well as to follow a request status.</p> <p>The service can be accessed at the following address: https://www.uninsubria.it/servizi/infostudenti-servizio-informazioni-gli-studenti</p>



II - TEACHING PLAN

TEACHING PLAN - Cohort 2024/2025

The teaching plan indicates the panel of lecture courses made available for the entire duration of a Degree Course, as well as the number and type of exams that must be successfully undertaken by all students enrolling in the current academic year (enrollment cohort 2024/2025) to complete the training course and obtain the qualification. All the courses are delivered in Italian.

LES = frontal lesson; EX = tutorial session, LAB = laboratory.

KEY TEACHINGS

YEAR	SEM ^(a)	LECTURE COURSE TITLE	LECTURE MODULE TITLE	SUBDISCIPLINE (SSD)	TAF / SUBJECT AREA	UNIVERSITY CREDITS (CFU)	HOURS ^(b)	VERIFICATION METHODS ^(c)
1	II	INDUSTRIAL CHEMISTRY		CHIM/04	B / INDUSTRIAL CHEMICAL DISCIPLINES	10	LES: 64 LAB: 24	V
1	I or II	CURRICULAR ELECTIVE COURSES (see table A)			B	48		V
2	I or II	CURRICULAR ELECTIVE COURSES (see table B)			C	16		V
2	I or II	ELECTIVE COURSE(S)			D / STUDENTS' CHOICE	8		V
2		FURTHER KNOWLEDGE			F / USEFUL ADDITIONAL KNOWLEDGE TO ENTER THE JOB MARKET	2		
2		THESIS			F / TRAINING AND CAREER GUIDANCE INTERNSHIPS	33		
2		FINAL EXAM			E / FINAL EXAM	3		

(a) I = first semester; II = second semester.

(b) 1 CFU of lectures (LES) = 8 hours; 1 CFU of tutorial session (ESE) or laboratory practice (LAB) = 12 hours.

(c) G = qualitative evaluation; V = examination; I = suitability; F = frequency.



TABLE A

Students must choose two TAF B lecture courses for each of the following subdisciplines (SSD): CHIM/01, CHIM/02, CHIM/03 and CHIM/06, for a total of 48 University Credits (CFU).

YEAR	SEM	LECTURE COURSE TITLE	LECTURE MODULE TITLE	SUBDISCIPLINE (SSD)	TAF / SUBJECT AREA	UNIVERSITY CREDITS (CFU)	HOURS ^(b)	VERIFICATION METHODS ^(c)
1	I	MATERIALS ANALYTICAL CHEMISTRY		CHIM/01	B / ANALYTICAL AND ENVIRONMENTAL CHEMISTRY	6	LES: 48	V
1	II	CHEMOMETRICS		CHIM/01	B / ANALYTICAL AND ENVIRONMENTAL CHEMISTRY	6	LES: 48	V
1	I	ELECTROANALYSIS		CHIM/01	B / ANALYTICAL AND ENVIRONMENTAL CHEMISTRY	6	LES: 40 LAB: 12	V
1	I	COMPUTATIONAL PHYSICAL CHEMISTRY		CHIM/02	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 32 LAB: 24	V
1	II	NANOMATERIALS		CHIM/02	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 32 LAB: 24	V
1	II	APPLIED PHYSICAL CHEMISTRY: FROM MOLECULES TO DEVICES		CHIM/02	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 48	V
1	I	ADVANCED INORGANIC CHEMISTRY		CHIM/03	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 48	V
1	II	ORGANOMETALLIC CHEMISTRY		CHIM/03	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 48	V
1	I	STRUCTURAL CHEMISTRY		CHIM/03	B / INORGANIC CHEMICAL AND CHEMICAL-PHYSICAL DISCIPLINES	6	LES: 48	V
1	I	ADVANCED ORGANIC CHEMISTRY		CHIM/06	B / ORGANIC CHEMICAL DISCIPLINES	6	LES: 48	V
1	I	CHEMISTRY OF HETEROCYCLIC COMPOUNDS		CHIM/06	B / ORGANIC CHEMICAL DISCIPLINES	6	LES: 48	V
1	I	PRINCIPLES OF ORGANIC SYNTHESIS		CHIM/06	B / ORGANIC CHEMICAL DISCIPLINES	6	LES: 48	V

(a) I = first semester; II = second semester.

(b) 1 CFU of lectures (LES) = 8 hours; 1 CFU of tutorial session (EX) or laboratory practice (LAB) = 12 hours.

(c) G = qualitative evaluation; V = examination; I = suitability; F = frequency.



TABLE B

Students must choose two TAF C lecture courses for a total of 16 University Credits (CFU).

YEAR	SEM	LECTURE COURSE TITLE	LECTURE MODULE TITLE	SUBDISCIPLINE (SSD)	TAF / SUBJECT AREA	UNIVERSITY CREDITS (CFU)	HOURS ^(b)	VERIFICAZIONE METODI ^(b)
2	I	PROCESSES ANALYTICAL CHEMISTRY	ANALYTICAL PROCESS CHEMISTRY (MODULE A)	CHIM/01	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			ANALYTICAL PROCESS CHEMISTRY (MODULE B)	CHIM/01	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	I	ANALYTICAL CHEMISTRY FOR CULTURAL HERITAGE	ANALYTICAL CHEMISTRY FOR CULTURAL HERITAGE (MODULE A)	CHIM/01	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			ANALYTICAL CHEMISTRY FOR CULTURAL HERITAGE (MODULE B)	CHIM/01	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	I	MOLECULAR SPECTROSCOPY	MOLECULAR SPECTROSCOPY (MODULE A)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			MOLECULAR SPECTROSCOPY (MODULE B)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	II	MATERIALS FOR ENERGY	ENERGY MATERIALS (MODULE A)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			ENERGY MATERIALS (MODULE B)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	I and II	THEORETICAL CHEMISTRY	THEORETICAL CHEMISTRY (MODULE A)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			THEORETICAL CHEMISTRY (MODULE B)	CHIM/02	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	II	HOMOGENEOUS CATALYSIS		CHIM/03	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	8	LES: 40 LAB: 36	V
2	I	BIOINORGANIC CHEMISTRY	BIOINORGANIC CHEMISTRY (MODULE A)	CHIM/03	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			BIOINORGANIC CHEMISTRY (MODULE B)	CHIM/03	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	I	ADVANCED SYNTHESIS IN ORGANIC CHEMISTRY	ADVANCED SYNTHESIS IN ORGANIC CHEMISTRY (MODULE A)	CHIM/06	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			ADVANCED SYNTHESIS IN ORGANIC CHEMISTRY (MODULE B)	CHIM/06	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V



YEAR	SEM	LECTURE COURSE TITLE	LECTURE MODULE TITLE	SUBDISCIPLINE (SSD)	TAF / SUBJECT AREA	UNIVERSITY CREDITS (CFU)	HOURS ^(b)	VERIFICAZIONE METODI ^(c)
2	I	SYNTHESIS AND PROPERTIES OF BIOLOGICALLY ACTIVE COMPOUNDS	SYNTHESIS AND PROPERTIES OF BIOLOGICALLY ACTIVE COMPOUNDS (MODULE A)	CHIM/06	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
			SYNTHESIS AND PROPERTIES OF BIOLOGICALLY ACTIVE COMPOUNDS (MODULE B)	CHIM/06	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	4	LES: 32	V
2	I	ADVANCED BIOCHEMISTRY AND BIOCHEMICAL METHODS		BIO/10	C / ELECTIVE SUPPLEMENTARY TRAINING ACTIVITIES	8	LES: 64	V

(a) I = first semester; II = second semester.

(b) 1 CFU of lectures (LES) = 8 hours; 1 CFU of tutorial session (EX) or laboratory practice (LAB) = 12 hours.

(c) G = qualitative evaluation; V = examination; I = suitability; F = frequency.



III - RULES OF THE DEGREE COURSE

PREREQUISITES

There are no prerequisites.

VALIDATION OF LANGUAGE AND ICT CERTIFICATIONS

Validation of language certifications (different from English language ones) may contribute to the award of the 2 CFU relating to "Useful additional knowledge to enter the job market" (TAF F). The same does not apply for ICT certifications.

VALIDATION OF PROFESSIONAL SKILLS OR EXAMS OBTAINED IN PREVIOUS CAREERS

Validation of professional skills

The Board of Studies may award credits toward the achievement of the 2 CFU related to "Useful additional knowledge to enter the job market" (TAF F) validating:

- certified professional knowledge and skills in accordance with current legislation on the subject;
- knowledge and skills gained in post-high school training activities, provided that the University has been involved in their design and implementation.

Students must submit a specific request to the Board of Studies *via* the Students Secretariat to ask for the validation of their professional skills.

Validation of exams passed during a previous career

Students transferring from other Degree Courses may ask for the validation of their previous career to the Students Secretariat at the time of enrollment, indicating all undertaken educational activities for which they have successfully sustained the pertinent exams, providing also the respective syllabi. Validation requests will be evaluated by the Board of Studies following the listed criteria:

- analysis of the syllabus of the training activities for which validation is requested;
- evaluation of the congruence between the subdiscipline topics or training activities content of their previous career and the specific training goals of the Master's Degree Course or its single activities.

Requests for exam validations after enrollment are not accepted.

Validation is performed following what indicated in the art. 3, paragraphs 8 and 9, of the Ministerial Decree for the redefinition of the Classes (March 16th, 2007). The number of CFU granted is limited by the amount of CFU that can be awarded by the Degree Course.

ATTENDANCE OBLIGATIONS

Attendance is compulsory for all tutorials in the classroom and in the laboratory.

FOLLOWING YEARS ENROLLMENT

There are no barriers to enroll in the second or later years of the Degree Course.

HOW TO TRANSFER FROM OTHER DEGREE COURSES

Students enrolled in other Universities or in different Degree Courses of the University of Insubria, as well as in cohorts of previous academic years, may request a transfer to the Master's Degree Course in Chemistry. In these cases, students may request the validation of their previous career, simultaneously with the application, to the Students Secretariat. Requests from students previously enrolled in different universities (*i.e.* incoming transfer) must be accompanied by the syllabi of the exams successfully undertaken: without the latter, no CFU would be awarded. To speed up the evaluation, exam syllabi should also be provided by students previously enrolled in different Degree Courses the University of Insubria.

The transfer requests are evaluated by the Board of Studies, which awards university credits basing on of the following criteria:



- analysis of the program of the training activities for which validation is requested;
- evaluation of the congruence between the subdiscipline topics or training activities content of their previous career and the specific training goals of the Master's degree course or its single activities.

Validation is performed following what indicated in the art. 3, paragraphs 8 and 9 of the Ministerial Decree for the redefinition of the Classes (March 16th, 2007). The number of CFU granted is limited by the amount of CFU that can be awarded by the Degree Course.

HOW TO SUBMIT INDIVIDUAL STUDY PLANS

When enrolling in the first year of the Degree Course, students are required submit their Individual Study Plan according to the University calendar of administrative obligations; in this, students are expected to choose:

- 1) 2 TAF-B lecture courses for each of the following subdisciplines (SSD): CHIM/01, CHIM/02, CHIM/03 and CHIM/06, for a total of 48 CFU (see Table A above);
- 2) 2 TAF-C elective supplementary lecture courses, for a total of 16 CFU (see Table B above);
- 3) TAF-D "freely chosen" activities, for a total of 8 CFU. These CFU are acquired upon passing the exams of lecture courses freely selected by the students, this including lecture courses active in other Degree Courses of the University of Insubria, provided that they are consistent with the educational path of the Master's Degree Course in Chemistry and have a different title from those featured by the Master's Degree Course in Chemistry.

The Board of Studies, following the positive assessment of the Individual Study Plan consistency with the educational objectives of the Master's Degree Course in Chemistry, deliberates its approval.

Information on the submission and compilation of Individual Study Plans can be found on the University web pages at the following address: <https://www.uninsubria.it/formazione/consigli-e-risorse-utili/piano-di-studio>

For further information and insights, you can consult the web pages of the Degree Course at the following address: <https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/chimica>