University of Sassari

Department of Chemical, Physical, Mathematical and Natural Sciences

Master's Degree Programme in CHEMICAL SCIENCES

(Class LM-54)

Degree Programme Regulations – Academic Year 2025/2026

The Master's Degree Programme in Chemical Sciences, belonging to the class of Master's Degrees in Chemical Sciences (Class LM-54), is established at the University of Sassari.

Learning Objectives

The programme aims to train graduates with a solid foundational and professional background tailored for employment in the main sectors of Chemistry. Upon completion of their studies, graduates of the Master's Degree in Chemical Sciences:

- shall possess a solid foundational knowledge in various fields of chemistry, along with advanced scientific and operational expertise in the core sectors of the degree class;
- shall demonstrate a proficient command of the scientific method of investigation;
- shall have a sound knowledge of supporting mathematical and IT tools;
- shall be able to use at least one European Union language other than Italian, in both written and oral form, including disciplinary technical terminology;
- shall be able to work with high levels of autonomy, assuming significant responsibility for projects and facilities.

Graduates will carry out activities related to the promotion and development of scientific and technological innovation, as well as the management and design of technologies. They may also hold high-level responsibility positions in the industrial, environmental, agri-food, healthcare, cultural heritage, and public administration sectors.

Duration and Organisation of Studies

The Degree Programme has a duration of two years. The total workload required is calculated at 120 credits. One University Credit (UC) is equivalent to 25 hours of student workload, divided between activities organised by the Degree Programme (contact hours) and independent study. One credit of lectures or theoretical tutorials corresponds to 8 contact hours, whereas one credit of laboratory practicals corresponds to 14 contact hours. Attendance at laboratory practicals is mandatory. The teaching and training activities of the Degree Programme are organised on a semester basis. Consequently, the academic year is divided into two periods during which lectures and tutorials are held, interspersed with breaks in teaching activities reserved for examination sessions.

Teaching activities take place according to the following calendar:
First Semester: 1 October – 31 January
Second Semester: 1 March – 10 June

The examination sessions are held according to the following calendar:
1st Session (two exam dates): 1 February – 28 (or 29) February
2nd Session (two exam dates): 15 June – 15 July
3rd Session (two exam dates): 1 September – 30 September

Admission Requirements

To be admitted to the Master's Degree Programme in Chemical Sciences, candidates must hold a First Cycle Degree (Bachelor's Degree, Class 21 or Class L-27) or another equivalent qualification obtained abroad and recognized as suitable. Admission is also open to students holding other Degrees, provided they demonstrate a sound foundational scientific knowledge in mathematics and physics, as well as adequate preparation in various chemical disciplines: general and inorganic chemistry, organic chemistry, physical chemistry, analytical chemistry, and materials chemistry. For all students, admission is subject to the requirements defined in the *Manifesto degli Studi*, specifically: a total of at least 80 ECTS within the following Scientific-Disciplinary Sectors (SSD): PHYS-01/A÷06/B, MATH-01/A÷05/A, MATH-01/B÷03/B, INFO-01/A, BIOS-07/A÷09/A, IIND-03/C, IMAT-01/A, and CHEM-01/A÷08/A (including a minimum of 40 ECTS in the sectors CHEM-01/A÷08/A, CHEM-01/B÷07/B, and CHEM-07/C).
Proficiency in the English language at level B1 (or higher) is required, as evidenced by a certificate, a university-level language proficiency credit, or verified through an interview.
Students who do not hold a Bachelor's Degree in Chemistry (Class 21 or L-27) or another recognized equivalent qualification must upload, during the pre-enrolment stage on the portal https://uniss.esse3.cineca.it/Home.do;jsessionid=5359ED5A65ED5A55423F4563405F5E25.esse3-uniss-web-prod-esse3web342?cod_lingua=eng, a certificate or self-certification documenting the fulfillment of the required criteria. A committee appointed by the Degree Programme Board will verify the admission requirements for candidates whose applications are received by the deadline specified annually in the *Manifesto degli Studi*.
The assessment of personal preparation is a mandatory requirement for enrolment in the Master's Degree in Chemical Sciences and is conducted via an interview. The interview is also open to students enrolled subject to obtaining their Bachelor's degree by 31 December of the current calendar year. Candidates who have obtained (or will obtain by 31 December) a Bachelor's Degree in Chemistry (Class 21 or Class L-27) are exempt from the interview, provided they meet the aforementioned English language requirements. Interviews are generally held at the Department of Chemical, Physical, Mathematical and Natural Sciences (Teaching Building, via Vienna 2) or online, on the dates and times specified annually in the *Manifesto degli Studi* and on the dedicated web pages (https://www.dcf.uniss.it/en/study/study-programmes/chemical-sciences-find-out-more). Conditional candidates admitted to the Master's Degree Programme will forfeit their right to enrol if they fail to graduate or do not formalise their enrolment by 15 January of the same academic year. All candidates must submit a pre-enrolment application following the online procedures at https://uniss.esse3.cineca.it/Home.do;jsessionid=5359ED5A65ED5A55423F4563405F5E25.esse3-uniss-web-prod-esse3web342?cod_lingua=eng.

Part-time Enrolment

Students who believe they can dedicate only part of their time to study may opt for part-time enrolment. Part-time students are permitted to complete the degree requirements over a longer period, not exceeding twice the standard duration of the programme.

"PA 110 e lode" Project

The Master's Degree Programme in Chemical Sciences participates in the "PA 110 e lode" project, which is aimed at public and private sector employees, as detailed at the following link: https://www.uniss.it/it/didattica/offerta-formativa/pa-110-e-lode. For students enrolled in this project,

teaching is delivered through E-learning and Blended learning modes. However, attendance at laboratory practicals remains mandatory.

International Double Degree Programme

The Master's Degree Programme offers an international track called ChemTech (Sassari: Master's Degree in Chemical Sciences; Lisbon: Master in Molecular Science and Engineering), established through a formal agreement with the Instituto Superior Técnico (University of Lisbon).

A specific number of students, selected by both Universities, are allowed to access this international track. It involves a one-year mobility period (during the second year) at the partner University to acquire a predefined number of credits through examinations and experimental research for the Master's thesis. Upon successful completion of the international programme, students will be awarded a Double Degree: the Master's Degree in Chemical Sciences (Class LM-54) from the University of Sassari and the "Master in Molecular Science and Engineering" from the University of Lisbon.

International Mobility

The Degree Programme promotes international student mobility, allowing students to spend a period of study at a foreign university to attend lectures, sit examinations, or undertake internships (which may also be used for thesis research). Student mobility is supported by Erasmus+ scholarships for both study (SMS) and traineeship (SMT) purposes, within or outside Europe (Ulisse programme). These activities must be pre-authorized by the Departmental Erasmus Committee.

Students are exempt from attendance requirements for courses held during the semester they are on mobility. The programme involves no additional tuition fees and guarantees the recognition of credits (ECTS) and studies completed abroad upon return. Credits earned abroad are recognized by the Departmental Erasmus Committee based on the Transcript of Records (ToR) and may entitle the student to a graduation grade bonus and, in some cases, financial rewards.

Elective Learning Activities

Throughout the Degree Programme, students must acquire a total of 8 ECTS through elective activities. Examinations from official courses offered by the University will be fully recognized provided their content is consistent with the programme's educational goals and does not duplicate previous topics. These activities must be approved by the Degree Programme Board.

At the beginning of each academic year, the Degree Programme offers a selection of recommended elective courses.

Related and Integrative Activities

Throughout the Degree Programme, students must acquire a total of 14 ECTS in the related and integrative activities specified in the *Manifesto degli Studi*.

Orientation and Training Internship

A total of 2 ECTS will be awarded for a training and orientation internship activity organised within the Degree Programme.

Final Examination and Graduation

The final examination consists of the defense of a written dissertation concerning the internship and experimental activities carried out by the student. The activities required for the degree culminate in the final dissertation and take place during the first and second semesters of the second year. The final examination is worth 40 ECTS, distributed as follows: research and preparatory studies: 32 ECTS; drafting of the thesis: 6 ECTS; final dissertation: 2 ECTS.

The research and preparatory studies consist of an internship and experimental activity, which are assigned 18 and 14 ECTS respectively.
Students are supported in the drafting of their thesis through specific preparatory activities. The final grade is awarded on a scale of 110, with the possibility of honors.

Regulations for Thesis Commencement

The complete thesis period includes both the internship and the thesis research.
Students may submit a single application for concurrent entry into both the internship and thesis periods, or two separate applications as specified below:

a) Thesis with Integrated Internship

This applies to students intending to carry out the entire thesis and internship period within the Department of Chemical, Physical, Mathematical, and Natural Sciences. This may be accessed at any time and has a duration of 13 months.
The application for a thesis with an integrated internship (available at https://www.dcf.uniss.it/en/study/study-programmes/chemical-sciences-find-out-more/forms-and-regulations) must be sent via email to the Teaching Coordinator and the Chair of the Degree Programme for approval by the Board at least 13 months prior to the thesis defense

b) Internship (Non-integrated)

This applies to those intending to carry out the internship period: i) in a period that is not necessarily contiguous with the remainder of the thesis period and/or ii) at least partially within extra-departmental facilities (including Erasmus, Ulisse, etc. periods).
This activity is worth 2 ECTS and can be accessed at any time following consultation with a supervisor (a professor from the Department), who co-signs the application form to be submitted to the Degree Programme Board for approval.
Should the internship involve a period at an extra-departmental facility, a responsible supervisor from the host organisation will be identified. At the end of the period, the host supervisor will provide an evaluation of the student's activity. This evaluation will be reviewed by the Degree Programme Board for the purpose of credit recognition. The internship period cannot be less than 7 days full-time and cannot overlap with the thesis period.
The application form for the internship (non-integrated) can be found at: https://www.dcf.uniss.it/en/study/study-programmes/chemical-sciences-find-out-more/forms-and-regulations. It must be sent via email to the Teaching Coordinator and the Chair of the Degree Programme in due time for approval by the Board.

c) Thesis (Non-integrated)

This may be accessed at any time and has a duration of 12 months.
The application for a thesis (without integrated internship) is available at https://www.dcf.uniss.it/en/study/study-programmes/chemical-sciences-find-out-more/forms-and-regulations and must be sent via email to the Teaching Coordinator and the Chair of the Degree Programme for Board approval at least 12 months prior to the graduation session. The internship period cannot overlap with the thesis period.

Criteria for Awarding the Graduation Grade

The final graduation grade is calculated as the sum of the following parameters:

a) Weighted Average: The average of the grades of individual courses weighted by credits, converted to a scale of 110. For this purpose, a grade of "30 con lode" (30 with honors) is counted as 31.

b) International Mobility Bonus: 0.1 points for each non-extra-curricular ECTS (CFU) acquired abroad through Erasmus or Ulisse projects, up to a maximum of 2.0 points.

c) Duration of Studies:
0 years "fuori corso" (on-time graduation): 1.5 points

1 year "fuori corso": 1.0 points

2 years "fuori corso": 0.5 points

More than 2 years "fuori corso": 0 points

d) Graduation Committee Points: Up to 5.0 points at the discretion of the Committee.

If necessary, the final value obtained is rounded up to the nearest whole number.
If the the score reaches at least 112/110, upon the proposal of the thesis supervisor and with the unanimous consensus of the members present, the grade of 110/110 with honors (lode) may be awarded.

Study Plan
Upon enrolment, students are assigned a Standard Study Plan, which must be completed independently by the student online through the Uniss Student Self-Service area.
Students must add to their plan: 4 ECTS of "related" courses (**TAF C**), chosen from the table provided in the *Manifesto degli Studi*, and 8 ECTS of elective courses (**TAF D**), including subjects not previously selected and/or courses offered by the Degree Programme.
To include courses offered by other Degree Programmes within the University, a request must be sent to the Teaching Coordinator. These subjects will be added to the student's record subject to approval by the Teaching Committee, which assesses their relevance and consistency with the educational pathway.
The online submission or modification of the standard study plan is permitted from 1 September to 31 October and from 1 January to 28 February. For further information, please refer to the application guide https://www.uniss.it/sites/default/files/2023-11/tutorial_piano_studi_self_v_1.4.pdf.

Academic Plan for the Master's Degree in Chemical Sciences (Class LM-54) valid for students enrolled in the 2025/2026 academic year

YEAR I (a. a. 2025/2026)					
First semester					
Type	**SSD**	**COURSE OF STUDY**	**ECTS**		
			Lectures	Tutorials	Laboratory
B	CHEM-01/A	Analytical Chemistry	5		1
B	CHEM-02/A	Physical Chemistry of solid state	6		
B	CHEM-05/A	Advanced Organic Chemistry	6		2
B	CHEM-04/A	Advanced Polymeric Materials	5		3
F		English language	2	2	

YEAR I (a. a. 2025/2026)					
Second semester					
Type	**SSD**	**COURSE OF STUDY**	**ECTS**		
			Lectures	**Tutorials**	**Laboratory**
B	CHEM-03/A	Advanced Inorganic Chemistry	4		2
B	CHEM-02/A	Spectroscopy and Structural Analysis	5		1
B	CHEM-01/A	Applied Electroanalytical Chemistry	5		1
B	CHEM-03/A	Organometallic Chemistry	6		
C	PHYS-07/A	Radiation Physics with Applications	3		1

YEAR II (a. a. 2026/2027)					
First semester					
Type	**SSD**	**COURSE OF STUDY**	**ECTS**		
			Lectures	**Tutorials**	**Laboratory**
C	CHEM-05/A	Sustainable Organic Chemistry	4		2
C		A course chosen from those listed in Table A (4 ECTS credits)*			
D		Elective Activities (8 ECTS credits)			

YEAR II (a. a. 2026/2027)					
Second semester					
Type	**SSD**	**COURSE OF STUDY**	**ECTS**		
			Lectures	**Tutorials**	**Laboratory**
E		Orientation and training internship **	2		
F		Final Examination 40 ECTS credits***			

SEM	Type	SSD	COURSE OF STUDY	ECTS		
				Lectures	Tutorials	Laboratory
1	C	CHEM-02/A	**Materials and Processes for Next-Generation Batteries**	3		1
1	C	CHEM-02/A	**Physical Chemistry of complex systems**	4		
1	C	CHEM-03/A	**Metals in Medicine**	4		
1	C	CHEM-04/A	**Macromolecular Synthesis Laboratory**			4
2	C	CHEM-03/A	**Materials, Technologies, and Conservation of Cultural Heritage**	4		
2	C	CHEM-02/A	**Elements of Heterogeneous Catalysis**	3		1
2	C	CHEM-01/A	**Environmental Legislation and Analysis**	4		
1	C	CHEM-03/A	**Nanomaterials and their applications**	3		1

Types of Educational Activities

B: Core disciplinary activities; C: Related or integrative activities; D: Elective activities chosen by the student; E: Final examination and foreign language; F: Other educational activities. Credits corresponding to disciplinary courses are acquired by the student upon passing the relevant examination. Evaluation is expressed on a scale of 30 (e.g., 30/30).