



UNIVERSITÀ DI PAVIA
Dipartimento di Chimica

ACADEMIC REGULATIONS

(art. 12 - Ministerial decree no. 270 of 22/10/2004)

MASTER'S DEGREE COURSE IN

CHEMISTRY

Class LM-54

Academic Year Cohort **2026/2027**

Approved at the Department Council meeting on 26 March 2026

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PART ONE – GENERAL PROVISIONS

Article 1 – Programme name, category, teaching institution and duration

1. The Master's Degree Course in Chemistry, established by the Department of Chemistry of the University of Pavia, belongs to Class LM-54 of Master's Degrees in Chemical Sciences, pursuant to Italian Ministerial Decree No. 1649 of 19 December 2023.
2. The duration of the Master's degree course is two years.

Article 2 – Regulatory reference texts

1. In accordance with academic freedom and the rights and duties of academic staff and students, the organisation of teaching and the conduct of educational activities for the Master's Degree Course in Chemistry shall be governed by these Regulations, the Charter of the University of Pavia, the University General Regulations, the University Academic Regulations, the Student Career Regulations, and the Regulations for Part-Time Enrolment available at [Charter and Regulations | University of Pavia](#), and by the Regulations of the Department of Chemistry available at [Records and Documents | Department of Chemistry](#).
2. For all matters not expressly provided for in these Regulations, the provisions of the law in force apply.

Article 3 – Body responsible for academic and organisational coordination

1. In accordance with the responsibilities and criteria established by the Regulations under Article 2 hereabove, as well as the provisions set forth in the Regulations governing the composition and operation of Academic Councils, the body responsible for the academic and organisational coordination of the Master's Degree is the Academic Council of Physical Sciences and Technologies, hereinafter referred to as the Academic Board.

Article 4 – Administrative services

1. In accordance with the responsibilities and criteria established by the Regulations referred to in Article 2, administrative support to the Academic Council shall be provided by the Administrative Office of the Department of Chemistry and the relevant University Services.
2. The Student Academic Career Office, the Enrolment and Student Information and the Admissions Office are responsible for practices relating to the student's academic career (enrolment, transfers, etc.). Information available at the following links:
[Education | University of Pavia](#),
[Academic Programmes | University of Pavia](#)
3. The University Orientation Centre (Centro di Orientamento, COR) manages activities and projects to support students in the choice of university studies, the student's academic career, and the graduate's entry into the world of work. To this end, it organises collective and individual actions, counselling services and orientation meetings. The services offered by the COR can be consulted at: [Orienta UniPV](#)

PART TWO - ORGANISATION OF ACADEMIC ACTIVITIES

Article 5 – Annual Programme Plan

1. The degree programme's curricula, educational activities, and operational framework are set forth in the Course's Annual Programme Plan (SUA).
2. The SUA can be consulted at:
<https://gestionedidattica.unipv.it/index.php/file/2026SUA08435.pdf>

Article 6 - Requirements for admission

1. For admission to the Master's degree course, students must hold a bachelor's degree, or a three-year university diploma, or another qualification obtained abroad, recognised as suitable by the competent bodies of the University.
2. Students applying for admission to the Master's Programme must also meet certain curricular requirements and have an adequate personal background.
3. To demonstrate compliance with the requisite matriculation criteria, candidates must meet one of the following conditions:
 - (a) Hold a First-Cycle Degree (Class L-27 – Chemical Sciences and Technologies) conferred pursuant to Ministerial Decree 270/2004;
 - (b) Hold a Bachelor's Degree (Class 21 – Chemical Sciences and Technologies) conferred pursuant to Ministerial Decree 509/1999;

(c) Hold a non-chemistry undergraduate degree and have acquired no fewer than 60 credits (CFUs) within core chemical disciplines (CHEM-01/A Analytical Chemistry, CHEM-02/A Physical Chemistry, CHEM-03/A General and Inorganic Chemistry, CHEM-05/A Organic Chemistry), with a minimum allocation of 15 CFUs per discipline; candidates must further demonstrate adequate proficiency in practical chemical laboratory work within the aforementioned areas, corresponding to at least 24 of the 60 CFUs stipulated above. Proficiency in practical chemical laboratory work must be demonstrated by the successful completion of examinations corresponding to university-level chemical laboratory courses. Alternative pathways, such as the completion of an experimental research thesis internship within a chemical field or professional employment in chemical laboratories, may be taken into consideration during the assessment of prerequisites conducted by the designated committee appointed by the Faculty Board.

(d) Hold an equivalent qualification awarded abroad and deemed suitable by the Academic Board.

Candidates are further required to demonstrate proficiency in the English language at a minimum of CEFR Level B2, or to have acquired no fewer than 3 academic credits (CFUs) in English language modules during their previous university studies.

4. Students meeting the matriculation criteria under 3 above must undergo an assessment of their personal academic background. This assessment, conducted by a designated committee appointed by the Academic Board, shall comprise an evaluation of the candidate's full prior academic record, which may be supplemented by additional documentation (e.g. course syllabi). The Committee may require the candidate to attend an interview. The assessment shall result in one of the following determinations:
 - (a) Unconditional admission to the Master's Degree Programme;
 - (b) Conditional admission to the Master's Degree Programme, subject to specific constraints regarding the selection of the curriculum or course specifications. Any such constraints must comply with the programme regulations and shall not restrict the student's entitlement to elective credits;
 - (c) Refusal of admission, accompanied by a reasoned statement;
 - (d) The imposition of academic deficiencies to be remediated prior to matriculation via individual modules or, where the candidate has not yet been conferred their first-cycle degree, through extra-curricular examinations.
5. The assessment under 4 above shall be waived for candidates who have graduated with a final mark of no less than 92/110 in one of the following first-cycle degrees:
 - (a) A Bachelor's Degree in Class 21 (Chemical Sciences and Technologies) conferred pursuant to Ministerial Decree 509/1999;
 - (b) A First-Cycle Degree in Class L-27 (Chemical Sciences and Technologies) conferred pursuant to Ministerial Decree 270/2004.
6. Mid-year enrolment is permissible, provided it is completed in due time to enable attendance at educational activities in compliance with requisite prerequisites and consistent with the overarching structure of the Degree Programme, without prejudice to the annual deadlines determined by the University Senate (Article 11 of the Student Career Regulations).
7. Admission to the Degree Programme is not subject to a cap on student numbers.
8. Non-EU international students must have a knowledge of Italian to at least B2 level.
More information at:
<https://portale.unipv.it/it/didattica/corsi-di-laurea/ammissioni/isciversi-ad-un-corso-di-studio-con-titolo-conseguito-allesterio>.

Article 7 – Academic organisation

1. Teaching is structured on a semester basis.

The Degree Programme is divided into the curricula specified in Appendix 1, which is published within the Annual Programme Plan.

2. The implementation of specific pathways shall be determined annually by the Department Board, acting upon the recommendation of the Academic Board, during the formulation of the academic programmes for the subsequent university year.
3. Students participating in the educational activities composing the Programme acquire academic credits (CFUs), in accordance with the regulations in force.
4. Credits accrued shall not be subject to expiry for the duration of the student's enrolment, irrespective of its length, except in cases of forfeiture or formal withdrawal from study; in the event of re-enrolment following such cases, the recognition of accrued credits shall be contingent, inter alia, upon an assessment of their potential obsolescence by the Academic Board (see Article 16 below). In exceptional and duly justified cases, the Academic Board may determine the obsolescence of credits relating to specific modules. The resolution concerning obsolescence shall specify the procedures for retrieving obsolete credits, establishing any supplementary assessments students must undertake for this purpose.

5. The average total learning commitment for a student engaged one year of full-time university studies is conventionally set at 60 CFUs.

6. Pursuant to current regulations, each credit (CFU) allocated within degree programmes equates to 25 hours of workload per student, of which a minimum of 50% shall be reserved for independent study or other individual learning activities (unless high-intensity experimental or practical activities are prescribed). Consequently, for each credit, the breakdown of contact hours delivered within the degree programme and hours reserved for independent study shall be as follows:

(a) For core academic courses, 8 hours dedicated to Classroom-based Teaching and 17 hours dedicated to individual study;

(b) For laboratory training, 12 hours shall be allocated to laboratory activities and 13 hours to independent study.

7. For some course subjects, such as those concerning transversal skills and Sustainable Development Goals (SDG) as defined by the UN Agenda 2030, the passing of the course exam results in the award of CFUs as well as the issue of an open badge, or a digital certificate attesting to the knowledge, skills and competences acquired through the learning path. The open badge is issued automatically when the exam result is recorded, and is sent to the student's university e-mail address.

8. Lecture schedules, examination periods, and graduation sessions shall be published by the Academic Board in compliance with ministerial deadlines, as set forth in the Annual Programme Plan (SUA).

9. At the conclusion of each semester, an examination period shall be scheduled, during which a minimum of two examination sittings must be held for each module. An additional resit period shall be scheduled, during which a minimum of one examination sitting must be held for each module. The total number of examination sittings for each module shall not be fewer than six per Academic Year.

10. Students who are athletes (Article 15, paragraph 2, letter c) may obtain ad hoc examination bookings in agreement with the relevant professors, in the case of conflicts with sporting commitments (competitions, training and related travel).

11. Beginning with academic year 2016-2017, students may enrol in the Master's Degree Plus (*Laurea Magistrale Plus*, LM+) programme, in the context of a collaboration project regulated by a specific agreement with a network of partner institutions and companies.

Starting in the second year, students in the LM+ programme undertake two semesters of training at affiliated organisations/companies as an integral part of their education, with the aim of acquiring specific professional skills coherent with the Programme. The institutions/companies included in the network agreement and the relative education programmes will be communicated over the course of the year, and meetings will be organised for communication with the interested students.

12. Students applying for enrolment in the LM+ scheme shall be selected by the Academic Board. The intake number shall be determined in accordance with the number of training projects offered by the participating companies, as specified in the relevant annual call for applications. The selection will be based on the candidate's curricular achievements, supplemented by the results of an individual interview. For assessment purposes, the Academic Council may request a non-binding opinion from the LM+ Steering Committee, composed of representatives of the University of Pavia and the partner organisations/companies.

13. Within the framework of the Master's Degree Plus (LM+), students may extend the standard duration of their programme of study up to three academic years, of which two semesters shall be dedicated to a training placement in industry (which may also include experience abroad). To make use of this possibility, the student must opt from the second year for enrolment in part-time mode, as per the relevant University Regulations.

14. In carrying out their activities at the host organisation/company, students will be followed by an organisation/company tutor and a university tutor, who will interact constantly in monitoring the ongoing achievement of the objectives defined in the education project. Assessments will be conducted twice during the educational path: one at mid-point and one final.

The student will be reimbursed for expenses incurred during the educational period with the organisation/company.

15. Students enrolled in the LM+ scheme shall be granted recognition of the academic credits (CFUs) accrued during their placement with the host organisation or company as extracurricular credits, as specified in the subsequent articles of these Regulations.

Article 8 – Study plans

1. All students shall be required to submit their study plan, in accordance with the template provided in Annex 1 to these Regulations, within the deadlines specified annually by the University. The curriculum choice must be made at the time of matriculation.

2. Study plans that comply with the provisions and curricula set out of these Regulations shall be automatically approved. For elective learning activities, as pursuant to Article 10(5)(a) of Ministerial Decree No. 270 of 22 October

2004 — where the selection is made from the approved list in Annex 1 — coherence with the programme of study's academic framework shall be automatically recognised.

3. Where, conversely, the selection is made from the learning activities offered across the University, coherence with the academic framework shall be assessed on a case-by-case basis by the Academic Board, taking into account the adequacy of any justification submitted by the student.
4. Students wishing to pursue an academic pathway other than that set out in these Regulations may submit an individual plan of study within the deadlines established annually by the University, provided that it complies with the constraints set forth in both the degree class specifications and the academic regulations.
5. The study plan must be approved by the Academic Council, which will take into account the student's needs for cultural education and professional preparation and may suggest changes to make the educational path more consistent with the specific educational objectives of the Programme.
6. Students enrolled on a part-time basis may extend the duration of their academic pathway by reducing the number of CFUs per year by up to half of the standard requirement, in accordance with tailored plans of study formulated on the basis of the provisions set forth by the Academic Board in the student's admission resolution.
7. Students enrolled on a part-time basis within the LM+ scheme shall follow study plans that are consistent with the project's objectives, wherein the activities relating to the training placement in industry shall be designated as extracurricular credits.
8. In addition to educational activities required to obtain the degree, extra activities may be added to the study plan not exceeding 24 academic credits, with the exception of activities in the medicine/healthcare and psychological areas, subject to national programming, taking care to abide by any preparatory activities required for the course of study.
9. Students holding a foreign qualification (EU, equivalent, and non-EU citizens) who opt for the curriculum delivered entirely in English (Bio- and Nanomaterials) shall be required to include the 3-credit Italian language module "Italian Language for Foreign Students" within their study plan under the category "Other Learning Activities - Additional Language Skills", unless they demonstrate an adequate proficiency in the language by submitting one of the following documents:
 - A first or second-cycle secondary school diploma, or a first-cycle degree, obtained in the Italian language from an Italian institution;
 - A diploma issued by an Italian school abroad;
 - An Italian language certificate of at least B1 level, recognised as valid by the relevant University functions.

Any further requests for exemption from the Italian language module shall be assessed by the Board of Studies and submitted to

resolution by the relevant Academic Board or Department Board.

Students who submit one of the documents indicated above, and are consequently exempt from the Italian language module, shall be required to include the 3-credit activity "Additional Language Skills" within their study plan, in the same manner as students holding a qualification obtained in Italy.

Article 9 – Joint degree programmes

1. No agreements or programmes are in place for the award of a dual degree.

Article 10 – Prerequisites and attendance obligations

1. Attending laboratory activities shall be compulsory for modules containing the term "laboratory" in their title. Any absences, which shall not in any event exceed 25% of the scheduled laboratory hours, must be duly justified and shall be assessed by the module leader for the purpose of issuing the attendance certificate.
2. No prerequisites are contemplated between the modules offered within the Master's Degree Programme (Annex 1).

Article 11 – Elective activities chosen by the student

1. Students enrolled in the Master's Programme are allowed to include 12 elective academic credits in their study plan (so-called "Type D" educational activity, TAFD, in keeping with Article 10, paragraph 5.a of Ministerial Decree 270/2004). Students may select from the modules offered across the University, and the Academic Board shall reserve the right to assess the coherence of such modules with the learning objectives of the Master's Degree Programme, taking into account the adequacy of any justification submitted by the student. Where the selection is made from the approved list in Annex 1, coherence with the programme of study's academic framework shall be automatically recognised.
2. Elective activities may include course subjects from the educational offer of three-year and master's courses, with the exception of those in the medicine/healthcare and psychological areas, which are subject to national programming. Students will not be able to choose subjects already studied and tested during previous university studies, unless they have been expressly validated.

3. Students enrolled in the LM+ scheme shall be granted recognition of the activities undertaken in industry as extracurricular academic credits, up to a maximum of 30 CFUs.

Such recognition shall be granted by resolution of the Academic Board, acting upon the recommendation of the university tutor and on the basis of the final assessment of the activities undertaken in industry.

Article 12 – Internships and traineeships

1. For the Master's Degree Programme, students may, upon request and subject to the approval of the Academic Board, undertake placements both in Italy and abroad.

Article 13 – Final examinations and assessments

1. For the purposes of the Programme, the student may not take more than 12 final examinations.

2. The final examinations or assessments taken must cover: the core educational activities, the related or supplementary activities, and the elective activities chosen by the student. The final examinations or assessments concerning the elective activities are considered in the count as corresponding to one unit (even if the credits assigned involve more than one final examination or assessment).

3. None of the educational activities referred to in letters c), d), e) paragraph 5 of Article 10 of Ministerial Decree 270/2004 are included in the calculation of the maximum number of final examinations or assessments. In any case, these activities must not be subject to more than five examinations, including the final examination for award of the degree.

4. Where module prerequisites are prescribed (Annex 1), students shall not be permitted to sit an examination without having first passed the corresponding prerequisite module. The scheduling of modules across the academic years and respective semesters shall align with all prescribed prerequisites.

5. Assessments shall be conducted by means of written and/or oral examinations.

6. Students are given an exam grade expressed in thirtieths, as reported in an ad hoc exam record-book. Credits are considered acquired if the evaluation is equal to or greater than 18/30. Laude honours may be awarded in the event of a maximum mark of 30/30.

An assessment of insufficiency is not accompanied by a grade. Any annotation in the examination report may be used for statistical purposes, but shall not be recorded in the student's report of university studies nor in the student's academic career. Pursuant to the Student Career Regulations (Article 30(1)), appraisals must be recorded, even negative ones.

7. Students shall be permitted to withdraw from an examination.

8. Language proficiency shall be assessed by the thesis supervisor, who shall issue the relevant certification, and a dedicated committee shall record the successful completion of the assessment for the award of 3 CFUs.

Article 14 – Final degree examination and award of the qualification

1. The student is awarded the degree after passing a final examination, designed to verify the achievement of the Master's Programme educational objectives.

2. The final examination, for which 39 CFUs shall be awarded, shall require students to prepare and defend an original written thesis, developed under the supervision of a University of Pavia faculty member in a chemical or related discipline acting as supervisor, and a co-supervisor where applicable.

3. Students enrolled in the LM+ scheme may agree upon a thesis topic related to their specific training placement with the host organisation or company; for such theses, the company tutor shall act as co-supervisor.

4. The thesis shall be defended in a public viva at the University of Pavia before a dedicated committee appointed by the Head of Department and comprising at least five members, of whom no fewer than four must be tenured professors or researchers responsible for modules delivered within the Department or shared with other University Departments.

5. Students shall be admitted to the graduation session upon having (i) accrued all the credits required for other academic activities and (ii) passed the corresponding assessments.

6. The objective of the final examination shall be to assess the candidate's capacity to undertake original work in the field of chemistry, and to present and defend it with clarity and a command of scientific language.

7. A referee shall be appointed in all cases. The final degree classification shall be calculated on a scale of 110 and shall incorporate a holistic assessment of the candidate's academic record. The award of first-class honours (*cum laude*), in addition to the maximum mark of 110, shall be subject to the proven excellence of the achievements of the candidate and the unanimous approval of the Committee.

8. The following criteria shall apply to the calculation of the initial mark:

- A weighted average of all examinations taken, with distinctions (*cum laude*) allocated an additional 0.5 points;
- The average shall include both extracurricular modules and credits recognised following a change of programme, institutional transfer, second degree, as well as those approved on the basis of a prior academic record;

- The average shall exclude both any supplementary learning obligations and modules that do not award a numerical mark (such as pass/fail assessments).
10. The final exam may be given in English. To this end, the following conditions must be met:
- the due authorisation of the Supervisor;
 - the exam (and/or the drafted document) taken only in English;
 - an “abstract” in Italian attached to the thesis, summarising the content thereof
 - title written in both English and Italian.

PART THREE – PROVISIONS CONCERNING STUDENT ACADEMIC CAREERS

Article 15 – Criteria for the recognition of duly certified extra-university knowledge and skills

1. Students may be granted recognition for credits accrued pursuant to Article 46 of the University Academic Regulations, as determined by the Academic Council.
2. The Academic Board may, by specific resolution, recognise duly certified knowledge and skills up to a total of 24 credits, of which:
 - a) for professional knowledge and skills, individually certified in accordance with the relevant regulations in force, up to 6 CFUs;
 - b) for knowledge and skills acquired in post-secondary educational activities planned with the participation of a university, up to 12 CFUs;
 - c) for sports activities recognised by the competent authorities, up to a maximum of 12 CFUs according to the following schedule: (i) sport practised at Olympic, world and European level, up to 6 CFUs; (ii) sport practised at Italian level and intermediate categories up to 3 CFUs; (iii) qualification in the "medal zone" at the University Championships, or the performance of competitive activities for the sections of Pavia University Sports Centre (CUS), including in the context of competitions at regional and national level, up to 6 CFUs.

Article 16 – Criteria for recognition of previous credits

1. At the time of enrolment, students who have already obtained a degree from the University of Pavia or another Italian or foreign university may request an abbreviation of their studies, which may be granted subsequent to the assessment, validation and recognition of CFUs in relation to the educational objects of Master's Programme, as determined by the Academic Council.
 2. In the event of an institutional transfer from other programmes of study within the University or from other universities, the recognition of the student's academic record, as well as the approval of any eligible credits, shall be determined by resolution of the Academic Board, acting upon the recommendation of the competent Teaching Committee.
 3. Credits shall be recognised pursuant to resolution of the Academic Board on a case-by-case basis, following a preliminary assessment conducted by one or more faculty members designated by the Board for this purpose. The type and number of eligible credits shall be determined on the basis of disciplinary relevance, taking into account the contribution of the learning activity to the achievement of the degree programme's learning objectives, its specific content and potential obsolescence, as well as the required workload hours. To this end, the application for recognition must be accompanied by official documentation; the faculty members designated for this purpose may undertake any further assessments deemed appropriate.
- In the event of formal withdrawal or forfeiture, the recognition of accrued credits shall likewise be determined by resolution of the Academic Board on a case-by-case basis, following a preliminary assessment conducted by one or more faculty members designated by the Board for this purpose.

Article 17 – Criteria for recognition of educational activities during study at Italian and foreign universities

1. Students enrolled in the programme of study may undertake a period of their studies at Italian or foreign universities with which conventions or agreements have been established (such as Erasmus or other exchange programmes)
2. Periods of study abroad normally vary in duration from 3 to 10 months, and may be extended, where necessary, up to a maximum of 12 months. Periods of study at other affiliated Italian universities have a minimum duration of 3 months up to a maximum of 6 months. The study plan to be followed at the host University, valid for the purposes of the academic career, and the number of credits that can be acquired shall be consistent with the duration.
3. Opportunities for study abroad or at Italian universities shall be made available to students through specific calls for applications setting forth, inter alia, the eligibility criteria and selection procedures. Selected students may be granted financial aid or other assistance provided under the mobility programmes and exchange agreements.
4. During their mobility period, students may undertake the following activities in accordance with the provisions of the relevant calls for applications:

- a) Attend modules and sit the corresponding examinations;
- b) Undertake research activities in preparation for the thesis.

5. In defining the training project, students, in agreement with the faculty members of the relevant disciplines, must specify the activities they intend to undertake abroad (or at the affiliated Italian university in the case of the Italian Erasmus scheme) that correspond to those included in their study plan. Prior to departure, students shall submit their Learning Agreement (specifying the modules to be taken during the mobility period and their corresponding credits), which must be agreed upon and signed by the student, the International Mobility Coordinator, and the counterpart at the host university.

6. At the conclusion of the study period, on the basis of the official Transcript of Records issued by the host foreign or Italian university, the relevant Academic Board or Department Board shall, by resolution, recognise the examinations taken abroad or at the host Italian university (provided they are relevant to the academic pathway) and award the corresponding credits.

7. The University of Pavia shall guarantee full recognition of the learning activities undertaken during the mobility period, provided that they comply with the latest approved Learning Agreement.

8. Where the recognised learning activities are not included in the student's latest approved study plan, the student shall be required to amend his or her study plan in accordance with the instructions provided by the relevant Academic Board or Department Board.

9. Students who have undertaken a mobility period and requested the recognition of activities completed abroad or at another affiliated university shall not be admitted to the graduation session in the absence of the relevant recognition resolution.

Article 18 – Admission to subsequent years

1. No requirements are envisaged for progression to subsequent years.

Article 19 – Certifications

1. No international language certificates are required for recognition.

Attachment n. 1**Study plan of the Master's degree in Chemistry – Cohort 2026-2027****LM-54 - Master's degree class in Chemical Sciences**

The 120 Credits (CFU) required to obtain the degree are divided according to the table below:

1 st year	CFU	2 nd year	CFU
1 Foundational course (TAF 'core')	6	2 Courses (TAF 'related')	12
2 Laboratory courses (9 CFU each – TAF 'core')	18	1 Course (TAF 'elective')	6
5 Courses (6 CFU each – TAF 'core')	30	Additional language skills	3
1 Course (TAF 'elective')	6	Experimental thesis	39

The choice of the *Foundational course* (TAF 'core') determines both the choice of the curriculum and the first *Laboratory course*; the remaining courses in the study plan are linked to the *Foundational course* as detailed below in the description of each individual curriculum.

1st YEAR**Curriculum *Analitical Chemistry***► **Foundational courses**

Course	CFU	Old SSD	New SSD	TAF
<i>Chimica Analitica III</i> (I sem.)	6 CFU	CHIM/01	CHEM-01/A	Core
<i>Laboratorio di Chimica Analitica III</i> (I sem.)	9 CFU	CHIM/01	CHEM-01/A	Core
<i>Laboratorio di Chimica Fisica III</i> (II sem.)	9 CFU	CHIM/02	CHEM-02/A	Core
<i>or</i>				
<i>Laboratorio di Chimica Inorganica III</i> (II sem.)	9 CFU	CHIM/03	CHEM-03/A	Core

► **Courses TAF ‘core’ (see Table 1):**

Two courses SSD *CHEM-01/A* ex *CHIM/01* – 6 CFU each

One course SSD *CHEM-02/A* ex *CHIM/02* – 6 CFU

One course SSD *CHEM-03/A* ex *CHIM/03* – 6 CFU

One course SSD *CHEM-05/A* ex *CHIM/06* – 6 CFU

► One course TAF ‘elective’ - 6 CFU

Curriculum *Materials Chemistry*

► **Foundational courses**

Course	CFU	Old SSD	New SSD	TAF
<i>Chimica Fisica III</i> (II sem.)	6 CFU	CHIM/02	CHEM-02/A	Core
<i>Laboratorio di Chimica Fisica III</i> (II sem.)	9 CFU	CHIM/02	CHEM-02/A	Core
<i>Laboratorio di Chimica Analitica III</i> (I sem.)	9 CFU	CHIM/01	CHEM-01/A	Core

► **Courses TAF ‘core’ (see Table 1):**

Two courses SSD *CHEM-02/A* ex *CHIM/02* – 6 CFU each

Two courses SSD *CHEM-03/A* ex *CHIM/03* – 6 CFU each

One course SSD *CHEM-05/A* ex *CHIM/06* – 6 CFU

► One course TAF ‘elective’ - 6 CFU

Curriculum *Organic Chemistry*

► **Foundational courses**

Course	CFU	OldSSD	New SSD	TAF
<i>Chimica Organica III</i> (I sem.)	6 CFU	CHIM/06	CHEM-05/A	Core
<i>Laboratorio di Chimica Organica III</i> (I sem.)	9 CFU	CHIM/06	CHEM-05/A	Core
<i>Laboratorio di Chimica Inorganica III</i> (II sem.)	9 CFU	CHIM/03	CHEM-03/A	Core
<i>or</i>				
<i>Laboratorio di Chimica Fisica III</i> (II sem.)	9 CFU	CHIM/02	CHEM-02/A	Core

► **Courses TAF ‘core’ (see Table 1):**

Two courses SSD CHEM-05/A ex CHIM/06 – 6 CFU each

One course SSD CHEM-01/A ex CHIM/01 – 6 CFU

One course SSD CHEM-02/A ex CHIM/02 – 6 CFU

One course SSD CHEM-03/A ex CHIM/03 – 6 CFU

► *One course TAF ‘elective’ - 6 CFU*

Curriculum *Supramolecular and Bioinorganic Chemistry*

► Foundational courses

Course	CFU	Old SSD	New SSD	TAF
<i>Chimica Inorganica III</i> (I sem.)	6 CFU	CHIM/03	CHEM-03/A	Core
<i>Laboratorio di Chimica Inorganica III</i> (II sem.)	9 CFU	CHIM/03	CHEM-03/A	Core
<i>Laboratorio di Chimica Organica III</i> (I sem.)	9 CFU	CHIM/06	CHEM-05/A	Core

► Courses TAF ‘core’ (see Table 1):

Two courses SSD *CHEM-03/A* ex *CHIM/03* – 6 CFU each

One course SSD *CHEM-01/A* ex *CHIM/01* – 6 CFU

Two courses SSD *CHEM-02/A* ex *CHIM/02* – 6 CFU each

► One course TAF ‘elective’ - 6 CFU

Curriculum *Bio- and Nanomaterials*

► Foundational courses

Course	CFU	Old SSD	New SSD	TAF
<i>Chemistry for Bio- and Nanomaterials</i> (I sem.)	6 CFU	CHIM/02 CHIM/03	CHEM-02/A CHEM-03/A	Core
<i>Laboratory for Bio- and Nanomaterials</i> (II sem.)	9 CFU	CHIM/02 CHIM/03	CHEM-02/A CHEM-03/A	Core

Laboratory for Bio- and Functional Polymers (II sem.) 9 CFU CHIM/06 CHEM-05/A Core

► **Courses TAF ‘core’ (see Table 2):**

Two courses SSD *CHEM-05/A ex CHIM/06* – 6 CFU each

One course SSD *CHEM-01/A ex CHIM/01* – 6 CFU

One course SSD *CHEM-02/A ex CHIM/02* – 6 CFU

One course SSD *CHEM-03/A ex CHIM/03* – 6 CFU

► *One course TAF ‘elective’ - 6 CFU*

Table 1 – TAF ‘core’ Courses for curricula: *Analytical Chemistry, Materials Chemistry, Organic Chemistry, Supramolecular and Bioinorganic Chemistry*

Select the TAF ‘core’ courses for each curriculum from the table below, following the guidelines provided in the previous outlines. The foundational core courses for each curriculum are indicated in italics.

Course	Sem	Old SSD	New SSD	TAF
<i>Chimica Analitica III – 6 CFU</i>	I	CHIM/01	CHEM-01/A	Core
Chimica Elettroanalitica – 6 CFU				
Trattamento dati univariato e multivariato – 6 CFU				
<i>Chimica per le Scienze Forensi – 6 CFU</i>	II	CHIM/01	CHEM-01/A	Core
Analisi degli Alimenti e Sicurezza alimentare con Laboratorio - 6 CFU				
Tecniche di Disegno Sperimentale - 6 CFU				

Accumulo e Conversione di Energia – 6 CFU Chimica Fisica dei Dispositivi a Stato Solido – 6 CFU Chimica Fisica dei Metalli e dei Ceramici – 6 CFU Nanochimica e Nanomateriali – 6 CFU Spettroscopie per lo Stato Solido – 6 CFU Tecniche di Modellizzazione in Chimica dei Materiali– 6 CFU	I	CHIM/02	CHEM-02/A	Core
<i>Chimica Fisica III – 6 CFU</i> Nuovi Materiali e Processi per il Fotovoltaico – 6 CFU Stato Solido di sostanze di interesse farmaceutico – 6 CFU Tecniche di Caratterizzazione dei Materiali – 6 CFU	II	CHIM/02	CHEM-02/A	Core
Chimica delle Metalloproteine – 6 CFU	I	CHIM/03	CHEM-03/A	Core
<i>Chimica Inorganica III – 6 CFU</i> Chimica Metallorganica – 6 CFU Chimica Supramolecolare – 6 CFU Microspettroscopia inorganica e bioimaging – 6 CFU Nanochimica Inorganica – 6 CFU Chimica dei Composti di Coordinazione – 6 CFU	II	CHIM/03	CHEM-03/A	Core
<i>Chimica Organica III – 6 CFU</i> Chimica Organica Superiore – 6 CFU Chimica al computer: dalla progettazione di farmaci alla simulazione di sistemi biochimici – 6 CFU Chimica Verde – 6 CFU	I	CHIM/06	CHEM-05/A	Core

Advanced Stereoselective Synthesis – 6 CFU	II	CHIM/06	CHEM-05/A	Core
Chimica dei Composti Eterociclici – 6 CFU				
Chimica delle Sostanze Organiche Naturali – 6 CFU				
Chimica e Tecnologie dei Polimeri – 6 CFU				
Introduction to Molecular Computational Chemistry – 6 CFU				
Sintesi organiche avanzate – 6 CFU				

Table 2 – TAF ‘core’ courses for curriculum *Bio- and Nanomaterials*

Select the TAF ‘core’ courses for this curriculum from the table below, following the guidelines provided in the previous outline.

Course	Sem	Old SSD	New SSD	TAF
Chemosensors and biosensors – 6 CFU	I	CHIM/01	CHEM-01/A	Core
Experimental Design Techniques – 6 CFU	II			
Advanced analytical and Bioanalytical chemistry – 6 CFU	II			
Characterization of Bio- and Nanomaterials – 6 CFU	I	CHIM/02	CHEM-02/A	Core
Physical chemistry of inorganic bio- and nanomaterials for biological applications – 6 CFU	II			
Microspectroscopy applied to Bio- and Nanomaterials – 6 CFU	I	CHIM/03	CHEM-03/A	Core
Supramolecular devices – 6 CFU	II			
Artificial Intelligence for Drug Design and Beyond – 6 CFU	I	CHIM/06	CHEM-05/A	Core
Introduction to Molecular Computational Chemistry- 6 CFU	II			
	II			
Chiral Polymers for Nanotechnologies – 6 CFU				

One Elective course

The student's elective course can be selected from Table 1, Table 2, and/or the subsequent Related Courses Table, excluding any courses already chosen as a Foundational course, a Core course within the various disciplines (based on the chosen curriculum), or a Related course (in the 2nd year). Alternatively, students may choose from any course offered by the University; in this case, the Study Plan will be evaluated and subject to approval by the Teaching Board.

Students may include as elective courses any courses already completed as extra credits during their Bachelor's degree, provided they are still offered and subject to validation by the Teaching Board.

2nd YEAR

The student must choose two TAF 'related' courses, for a total of 12 CFU, from those specified in Table 3 or Table 4, depending on the chosen curriculum.

Table 3 - TAF 'related' Courses for curricula: *Analytical Chemistry, Materials Chemistry, Organic Chemistry, Supramolecular and Bioinorganic Chemistry*

Course	Sem	Old SSD	New SSD	TAF
Cristallochimica dei minerali e applicazioni per l'industria e l'ambiente – 6 CFU	I	GEO/06	GEOS-01/A	Related
Metodi Fisici in Chimica Inorganica – 6 CFU	I	CHIM/07	CHEM-06/A	
Tecniche spettroscopiche interpretative – 6 CFU				
Sintesi in fase solida di macro e biomolecole – 6 CFU				
Chimica Circolare e Ecodesign con Laboratorio – 6 CFU				
Chimica e Tecnologia dei Materiali – 6 CFU	II	CHIM/07	CHEM-06/A	
Methods and Materials for Restoration Chemistry – 6 CFU				
Advanced Topics in Carbon-based Materials – 6 CFU				
Metodologie Biochimiche – 6 CFU	II	BIO/13	BIOS-10/A	
Farmacologia – 6 CFU	II	BIO/14	BIOS-11/A	
Advanced Biocatalysis – 6 CFU	II	CHIM/11	CHEM-07/C	

Table 4 - TAF 'related' Courses for curriculum *Bio- and Nanomaterials*

Course	Sem	Old SSD	New SSD	TAF
Methods and Materials for Restoration Chemistry – 6 CFU	II	CHIM/07	CHEM-06/A	Related
Advanced Topics in Carbon-based Materials – 6 CFU				
Advanced Biocatalysis – 6 CFU	II	CHIM/11	CHEM-07/C	
Nanomedicine in Regenerative Medicine – 6 CFU	II	BIO/10	BIOS-07/A	
Mechano-bio-chemistry in Tissue Engineering – 6 CFU	To be determined	ING-IND/34	IBIO-01/A	
Innovability and Circular Entrepreneurship – 6 CFU	II	SECS-P/08	ECON-07/A	
Additive Manufacturing of Living Materials – 6 CFU	I	ING-IND/34	IBIO-01/A	
Sustainable materials for circular economy – 6 CFU	I	CHIM/04	CHEM-04/A	
Bioinspired materials for Pharmaceutical applications – 6 CFU	To be determined	CHIM/08 CHIM/09	CHEM-07/A CHEM-08/A	
Cell Biology – 6 CFU	II	BIO/06	BIOS-04/A	

502011 Ulteriori conoscenze linguistiche (3 CFU) *

511483 PREPARAZIONE PROVA FINALE (24 CFU)

500000 PROVA FINALE (15 CFU)

***As an alternative to this activity, students who choose the curriculum taught entirely in English (Bio- and nanomaterials) and hold a foreign degree must include the activity 'Italian language for foreign students' – code 509536 – 3 CFU - in their study plan. For further details, please refer to Art. 8, paragraph 9 of the Didactic Regulations.**

One Elective course

The second-year elective course is chosen in the same manner as the first-year elective course (see above).

Before completing the study plan, please verify the availability of the desired course in the academic offer for the relevant academic year by consulting the Course Catalogue on the University website. ([Cerca un insegnamento | Course Catalogue, Università di Pavia](#))