



**UNIVERSITÀ DI PAVIA**  
**Dipartimento di**  
**Scienze del Farmaco**

**DIDACTIC REGULATIONS**  
(art. 12 – Ministerial Decree 22 October 2004 n.  
270)

**MASTERS DEGREE COURSE IN**  
**INDUSTRIAL NANOBIOLOGICAL TECHNOLOGIES**  
**FOR PHARMACEUTICALS**

**LM-8 Class of Master's Degrees in**  
**INDUSTRIAL BIOTECHNOLOGIES**

**2023/2024 Cohort**

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## **PART ONE – GENERAL PROVISIONS**

### **Art. 1 – Denomination, class, place and duration**

1. The Master's degree course in Industrial nanobiotechnologies for pharmaceuticals, activated by the University of Pavia's Department of Pharmaceutical Sciences, under class LM-8 of Master's degrees in Industrial Biotechnologies, as regulated by Ministerial Decree dated 16 March 2007.
2. The usual course duration is two years.

### **Art. 2 – Reference legislation**

1. In compliance with freedom of teaching principles and the rights and obligations of teaching staff and students, the didactic organisation and development of the training activities foreseen for the Master's degree course in Industrial nanobiotechnologies for pharmaceuticals are governed by this text, by the Statute of the University of Pavia, the General University Regulations (<https://web.unipv.it/ateneo/statuto-regolamenti/>), the University Didactic Regulations, the Student Regulations (<https://web.unipv.it/ateneo/statuto-regolamenti/statuto-regolamenti-didattica/>) and the Regulations of the Department of Pharmaceutical Sciences at the University of Pavia (<http://dipsf.unipv.eu/site/home.html>). For that not expressly provided for in these Regulations, current provisions of the law apply.

### **Art. 3 – Organisation responsible for didactics and organisational co-ordination**

1. The Department of Pharmaceutical Sciences is responsible for the didactic and organisational co-ordination of the courses it activates.
2. The Department Council appoints the Quality Management Group (AQ), which supervises and promotes the quality policy for the Master's degree course in Industrial nanobiotechnologies for pharmaceuticals. The Quality Management Group coordinates the compilation of the Annual Study Programme form (SUA). It also acts as the Review Group and, therefore, draws up the Annual Study Programme form. The AQ management group is made up of the Course Coordinator, at least one student representative, at least one technical-administrative staff representative (PTA) and at least one member of the Course teaching staff.
3. In order to ensure the didactic and organisational coordination of the Master's degree course activities, in compliance with the overall planning and all the Department Board's other indications, a special Didactics council will be established, which will include the teaching staff from the Master's degree course.
4. The organisational responsibility of the Master's degree course's teaching activities is assumed by the President of the Didactics Council and by a member of the teaching staff designated for this purpose by the Council and nominated in the Annual Study Programme, without prejudice to the collegiality of the decisions and guidelines.

### **Art. 4 – Reference administrative services**

1. The administrative support of the course of study is entrusted to the competent Student Administration Office and to the Didactics Office at the Department of Pharmaceutical Sciences.  
The Didactics Office of the Department of Pharmaceutical Sciences is the first point of contact between students/teaching staff and administrative services. Upon indication of the President of the Didactics Board and of the commissions set up by the Department and teaching staff, the Administration Office publishes lesson times, exam sessions, tutoring activities and

communications relating to the activity of the Didactics Board.

2. The Orientation Center (C.OR.) manages activities and projects to help students select university courses, to support the student's university career and to facilitate their entry into the world of work. To this end, it organises group and individual initiatives, consultancy services and orientation meetings. The C.OR. website is: <http://www-orientamento.unipv.it/>  
The UOC Student career management, the UOC Enrolment procedures and student information and the UOC Admission office are responsible for issues relating to student careers (enrolment, transfers, etc.).

Information is available at the following links:

<https://web.unipv.it/servizi/segreteria-studenti-e-ufficio-tasse/>

<https://web.unipv.it/formazione/futuri-studenti/farmacia/>

## **PART TWO – ORGANISATION OF DIDACTIC ACTIVITIES**

### **Art. 5 – Annual Study Programme form**

The Annual Study Programme form can be consulted at:  
<https://sonl.unipv.it/ava/index.php/2023SUA07403.pdf>

### **Art. 6 - Admission requirements**

1. To be admitted onto the Master's degree course, students must hold a three-year university degree (including degrees obtained according to the regulations in force prior to Ministerial Decree 509/1999 and subsequent amendments and integrations) or diploma, or an equivalent qualification obtained abroad that is recognised as suitable by the competent University bodies.
2. In order to enrol onto the Master's degree course, students must also possess certain academic requirements and adequate personal qualities.

The curricular requirements are automatically recognised for candidates who hold degrees in classes: L-2 Biotechnology, L-13 Biological Science, LM-13 Pharmacy and Industrial Pharmacy, L27- Chemical Sciences and Technologies ex-Ministerial Decree 270/04 and in the corresponding classes instituted according to the previous course organisation ex-Ministerial Decree 509/99.

Admission is also granted to candidates who hold a degree in other classes, provided that the course has allowed them to acquire a certain number of university credits (CFUs) in the following scientific-disciplinary area (SSD):

- minimum of 10 CFUs in mathematics, physics, information technology and statistics disciplines corresponding to the following scientific-disciplinary areas: from FIS/01 to FIS/08, from MAT/01 to MAT/09, INF/01, SECS-S/01;

- minimum of 10 CFUs in chemistry and biology disciplines corresponding to the following scientific-disciplinary areas: CHIM/01, CHIM/02, CHIM/03, CHIM/06, BIO/01, BIO/10, BIO/11, BIO/13.

3. To conclude, to enrol on the Master's degree course, all students should be able to use the English language fluently (level B2 on the Common European Framework of Reference for language knowledge) in written and oral form, including disciplinary lexicons.
4. Candidates' possession of the requisites and the profile referred to in the previous paragraphs are verified through an interview with a commission designated for this purpose annually by the Didactics Council.
5. Graduates with a qualification and final mark of not less than 100/110 awarded by an Italian university and who hold meet the requisites outlined in paragraph 1 by the date set for student

interviews are exonerated from pre-evaluation and the interview.

6. The Commission, made up of three members of the University's teaching staff, delegated by the Didactics Council, evaluates candidates' possession of curricular requisites and will communicate the outcome of the pre-evaluation by email.
7. The Master's degree course evaluation consists of an interview before the Commission (see paragraph 4) and is used to verify candidates' personal suitability for enrolment.
8. All candidates who do not meet the requisites outlined in paragraph 5 will be interviewed.
9. Access to the Master's degree course is also permitted, by the deadline established by the University and on the basis of the provisions of the Student Regulations, to students about to obtain a suitable qualification ('conditional enrolment') and who have acquired at least 150 CFUs at the deadline for submitting the admission application.

## **Art. 7 – Didactics organisation**

1. Teaching is organised into semesters.
2. In accordance with current legislation, students attending activities that are part of the course acquire university training credits (CFUs).
3. The average amount of overall learning carried out in a year by a student enrolled in full-time university studies is conventionally set at 60 CFUs.
4. Given that, based on current legislation, each CFU awarded in the course of study is equivalent to 25 hours of average commitment per student, of which at least 50% is reserved to personal study or other individual training activities (except in cases in which activities involve a high degree of experimentation or practical content), for each CFU, the correspondence between the teaching hours provided for in the course of study and the hours reserved for individual study is as follows:
  - for ex-cathedra lessons, 8 hours dedicated to frontal lectures or equivalent teaching activities and 17 hours to individual study;
  - for laboratory teaching activities, seminars and exercises, 12 hours are dedicated to lectures and 13 hours dedicated to individual study.
  - for internships, 1 CFU corresponds to 25 hours of student activity.
5. Students acquire CFUs that correspond to each training activity by passing an examination or following another form of testing the competences and skills acquired.
6. Teaching is organised into semesters: October-January and March-June.
7. There are three exam sessions: January-February, June-July and September. For each session there must be at least two exam dates and no less than six exam sessions per year.
8. At least 15 days must elapse between the first and last date of each exam session.
9. Students can sit the same exam a maximum of six times in a solar year.
10. Exams in two parts, written and oral, are considered jointly in terms of exam date.
11. For student-athletes (art. 15 para 1 letter c) extraordinary exam sessions may be set if exam dates coincide with sporting commitments (competitions, training and transfers).
12. The calendars of lectures, exams and graduation sessions are published respecting Ministerial deadlines, as reported in the Annual Study Programme form. The exam calendar is published at the beginning of every solar year.

## **Art. 8 – Study plans**

1. All students are required to submit a study plan by the deadline date indicated annually by the University.
2. Standard study plans are approved *ex officio*, i.e. they comply with the rules indicated in Attachment 1 of these Regulations. For training activities referred to in letter a), paragraph 5 of art. 10 of Ministerial Decree dated 22 October 2004 n. 270, in which selections are made from

the list in Attachment 1, coherence with the study plans is approved *ex officio*. Activities chosen independently by the student from the activities offered by the University are assessed by the Academic Board for their coherence with the degree course activities, also taking into account any motivations provided by the student.

3. Students who intend to follow a training path other than that envisaged by these Regulations may submit, in compliance with the constraints envisaged by the degree class declaration and by the didactic organisation of the course, an individual study plan within the terms established annually by the University.
4. The individual study plan must be approved by the Didactics Council. The Council will take into account the student's cultural training and professional preparation and may suggest changes be made in order to bring the training path in line with the specific training objectives of the course of study.
5. In the study plan, as well as including the activities established for the awarding of the degree, the addition of extra training activities is permitted provided these do not exceed 24 CFUs.
6. European Union (EU), equivalent and non-EU students with qualifications obtained abroad will be required to follow an Italian language course for foreigners (3 CFUs) as part of the additional language skills of the TAF F. The following students are exonerated:
  - 1) students who have been awarded a secondary school qualification or a level I degree in Italian in Italy;
  - 2) students who have been awarded an Italian school qualification abroad;
  - 3) students who hold a level B2 Italian language certification.

Italian students and foreign students referred to in points 1), 2) and 3), will cover the 3 CFUs of the aforementioned TAF with the 'Other activities' training activity. (TAF F – Other knowledge useful for entry into the world of work)

#### **Art. 9 – Double degree programmes**

There are no agreements or programmes finalised at the attainment of a double degree.

#### **Art. 10 – Compulsory attendance and preparatory courses**

7. Attendance of lectures is students' right/obligation so it is highly recommended. Students must attend practical exercises: laboratory workshops, training activities and traineeships included in the study plan.
8. Traineeships are preparatory to the beginning of activities related to the final exam (experimental thesis).

#### **Art. 11 – Students' elective choice activities**

1. In the study plan of students enrolled onto the Master's degree course, the inclusion of 9 elective course credits is allowed (referred to in Article 10, paragraph 5.a, Ministerial Decree 270/2004 - so-called 'TAF D'). Students will be able to choose between the courses offered by the University and the Didactics Council may reserve the right to assess whether these courses are coherent with the educational objectives of the Master's degree course, also taking into account any motivations provided by the student. If the choice is made from the course list recommended by the Didactics Council, coherence with the Degree course is recognised *ex*

*officio.*

2. Elective course activities (referred to in Article 10 paragraph 5.a Ministerial Decree 270/2004 - so-called 'TAF D'), may include courses with limited places, both local and national, with the exception of limited-number courses at a national level in the medical and health fields.
3. Students will not be able to choose courses taken during previous university attendance unless specific validations have been obtained outside the 180 ECTS required to achieve the Bachelor's degree. The competent offices will verify students' correct application of the rule during a preliminary career check phase for admission to the graduation exam. Should the aforementioned rule be violated, students will not be admitted to the graduation exam and will be obliged to change the study plan.

## **Art. 12 – Internships and work placements**

1. The study plan includes an internship aimed at promoting knowledge and entry into the world of work. During the internship, students will learn a technique and/or a type of analysis. The internship is an integral part of the training programme and contributes to the achievement of the educational objectives of the Master's degree course.
2. The curricular teaching internship can be carried out at the University of Pavia's Department of Pharmaceutical Sciences laboratories.
3. It is possible to recognise extra-curricular internships undertaken at organisations outside the Department of Pharmaceutical sciences, conducted by students voluntarily, as part of the CFUs reserved to internships and as 'supernumerary' credits. This recognition is subject to the evaluation of the Didactics Council which will establish the credits to be accredited for the activity.

## **Art. 13 – Exams and final mark**

1. The CFUs corresponding to each training activity are acquired by students by passing an exam or another form of test of the skills acquired.
2. The period of validity of the credits acquired corresponds to the number of years envisaged in the Student Regulations for the loss of student status. After this time, the Didactics Council provides means to verify the credits acquired with the aim of evaluating the non-obsolescence of the cognitive contents.
3. The Master's course cannot include more than 12 exams or final marks.
4. The counting of the exams or final marks includes the specialised, related, or elective educational activities chosen by the student. The final exams or final marks related to the latter activities count as one unit (even if the credits assigned entail several exams or final marks).
5. The group of educational activities referred to in letters c) and d) of paragraph 5 of Art. 10 of Ministerial Decree 270/2004 does not count toward the maximum ceiling of exams or final marks; the tests provided for these activities must not exceed 5, including the final exam for obtaining the degree.
6. Exams and final tests verify students' knowledge, certify that students have reached the training objectives set by the course/part of course and can be supplemented by intermediate evaluation methods (*in itinere* tests). Teaching staff may include, in their course/part of their teaching, no more than one ongoing test for every 3 CFUs and which students are not obliged to take. In any case, teaching staff must provide information to students about how the ongoing tests will be regulated well in advance.
7. For written exams, teaching staff must publish marks within 15 days of the exam date.
8. The exams are conducted in oral or written form, or both written and oral form.
9. The exams involve an evaluation expressed in thirtieths, except for 'Internships', 'Other activities' and 'Italian language for foreign students' and are reported in a special register. The

CFUs are awarded if the evaluation is equal to or greater than 18/30. In case of a maximum evaluation of 30/30, *cum laude* can be added to the mark. An assessment of insufficiency is not accompanied by a mark, and any annotation in the register, which can be used for statistical purposes, is not reported in the student's academic record.

10. Teaching staff must publish on the Department website (link to the Syllabus) a detailed programme of the teaching activities.
11. Should the programme be modified due to a change in teaching staff or new teaching requirements, students have the right to take the exam following the programme from the year in which they took the course, only for the 3 subsequent sessions.
12. The lesson timetables are prepared by a commission (Timetable Commission) made up of teaching and technical-administrative staff from the Department of Pharmaceutical Sciences. Timetables are published respecting Ministerial deadlines, as indicated in the Annual Study Programme.

#### **Art. 14 – Final exam and awarding of the degree**

1. The degree is awarded after passing a final exam which verifies the achievement of the education objectives of the course of study. The final exam, to which 30 credits are attributed, consists in the writing and discussion by the student of an experimental by the student before a commission appointed by the Director of the Department. The thesis is written using original data under the guidance of a supervisor who may be a member of the University of Pavia's teaching staff or the lead teacher for one of the Master's course's activities.
2. The degree mark is evaluated with a maximum of 110 and contributed to by the following parameters:
  - a. the arithmetic average, converted into a mark out of 110, of the curriculum exam marks;
  - b. the final exam mark assigned by the Degree Commission.
3. For the final mark, the Degree Commission may attribute a maximum of 10 points, subdivided by:
  - a. a maximum of 4 points that may be awarded by the supervisor based on the commitment, autonomy, critical capacity and originality shown by the candidate in developing and writing the thesis;
  - b. a maximum of 6 points that may be awarded by Commission members other than the supervisor based on the scientific rigor of the candidate's approach, knowledge of the subject, the quality of the presentation and the candidate's ability to defend the thesis. The mark assigned to the candidate consists of the rounded arithmetic mean of the marks assigned by the individual Commissioners other than the supervisor.
4. Candidates who, without rounding up, attain an overall mark greater or equal to 111/110 or 110 and 3 curricula *cum laude*, may be awarded by the Commission, by unanimous votes, *cum laude*.

### **PART THREE– PROVISIONS RELATED TO THE STUDENTS' ACADEMIC CAREER**

#### **Art. 15 – Criteria for the recognition of duly certified extra-scholastic knowledge and skills**

1. The Didactics Council may validate duly certified knowledge and skills for a maximum number of 12 CFUs, recognising them as Master's degree exams:
  - a) professional knowledge and skills, individually certified in accordance with current legislation on the subject, not to exceed 12 CFUs;
  - b) knowledge and skills gained in post-secondary level training activities that have been



designed by a university, for a maximum of 12 CFUs;

c) for sporting activities recognised by competent authorities, up to a maximum of 12 CFUs according to the following prospectus: (i) sport practised at Olympic, world or European level, up to 6 CFUs; (ii) sport practised at Italian and intermediate level up to 3 CFUs; (iii) activities for which a medal was awarded at the University Championships as well as the performance of competitive activities for the CUS Pavia sections, also as regards competitions at the regional and national levels, up to a maximum of 6 CFUs;

2. Validation requests are sent by the President of the Didactics Council to the Department's Transfer Commission which, after careful examination, proposes to the Didactics Council the instances of validation to be approved.

#### **Art. 16 – Criteria for the recognition of acquired university credits**

1. Pursuant to Article 46 of the University Didactic Regulations, the Didactics Council, having consulted the Pharmaceutical Department's Transfer Commission, considers the recognition of CFUs in the event of a transfer from other courses of study offered by the University of Pavia or other universities as well as other training activities undertaken at Italian or foreign universities.
2. If the student has transferred from another Master's degree of the same LM-8 class, the share of CFUs relating to the same scientific-disciplinary sector recognised cannot be lower than 50% of those already accrued.
3. The Didactics Council also makes decisions regarding the recognition of students who hold qualifications from the University of Pavia or another Italian university and who request, upon enrolment, an abbreviation of their studies.
4. Those whose student status has lapsed (art.31 of the Student Regulations) or who have given up their studies (art.32 of the Student Regulations) may, after enrolling again, have any CFUs recognised provided the Didactics Council has verified that they are not outdated. Recognition may be total or partial and, in the latter cases, the Didactics Council will provide integrative tests to make up any gaps in students' learning.

#### **Art. 17 – Criteria for the recognition of educational activities undertaken while studying at a foreign university**

1. As provided for in art. 47 and 48 of the University's Didactic Regulations, students may undertake a training or study period abroad in order to enhance their skills and knowledge.
2. The programme of activities to be taken at the foreign university is agreed by the student with the Erasmus delegate from the Department of Pharmaceutical Sciences and approved by the Didactics Council based on an analysis of the qualitative and quantitative data's alignment with the Master's course's defined objectives.
3. University credits accrued by students as part of mobility programmes (Erasmus plus and others), participating in activities as part of the learning agreement constitute a student's right.
4. Training credits acquired as part of mobility programmes will be formally recognised by the Didactics Council.

#### **Art. 18 – Admission to subsequent years**

1. Enrolled students do not have to reach a minimum number of CFUs to gain admission to subsequent years.

## Art. 19 – Certifications

- In order to certify students' knowledge of the English language at B2 level (defined in the Common European Framework of Reference for Languages established by the Council of Europe) and stated as a requirement for admission to the Master's degree course, the language certificates, corresponding at least to level B2 deemed suitable and officially approved, are the following:
  - BEC Vantage
  - B2 First (Cambridge English Qualification)
  - IELTS 5.5-6.5 'Academic'
  - TrackTest English Test B2
  - ILEC Pass
  - TOEFL iBT 72-94
  - Trinity College ISE II, GESE 7, GESE 8, GESE 9
  - 'Oxford Test of English'- Level B2
  - LCCI EfB Level 3.
- The suitability of other certifications of level B2 English will be evaluated on a case-by-case basis by the Commission designated to hold admission interviews.

## Attachment n. 1 – Course programme for Master's degree in Industrial nanobiotechnologies for pharmaceuticals – 2023-2024 cohort

### LM-8 – Master's degree class in Industrial biotechnologies

#### 1° YEAR

Code	Course	CFU	SSD	TAF	SEM
One of the following courses (TAF AFFINE – 3 CFU):					
Biology BIO/10 Organic chemistry CHIM/06 Analytical chemistry CHIM/01					
	Advanced biology	6	BIO/10	SPECIALISED	
	Pre-formulation and Pharmaceutical Technology (2 modules)	9			
	- Pre-formulation and biopharmacy	3	CHIM/09	RELATED	
	- Pharmaceutical Technology	6	CHIM/09	SPECIALISED	

	Traditional and innovative dosage forms (2 modules)	12			
	- Traditional and controlled release dosage forms	6	CHIM/09	RELATED	
	- Innovative dosage forms and introduction to nanomedicine	6	CHIM/09	SPECIALISED	
	Nanotechnology - based medicines	6	CHIM/09	SPECIALISED	
	Immunology and Biotechnological drugs (2 moduli)	9			
	- Immunology	3	MED/04	RELATED	
	- Biotechnological drugs	6	CHIM/08	SPECIALISED	
	Other activities*	3	NN	OTHER – Other knowledge useful for entry into the world of work	
	Traineeship	12	NN	OTHER – Training internships and orientation	

\*In alternative to this training activity, foreign students who do not have adequate knowledge of Italian (art. 8 paragraph 6) can include in the study programme the 'Italian language for foreign students' (3 CFU) – TAF ALTRO – Other languages activity

## 2° YEAR

Code	Course	CFU	SSD	TAF	SEM
	Statistics and Chemometrics	6	SECS-S/01	SPECIALISED	
	Industrialization (2 modules)	9			

	- Analytical methods in nanomedicine	3	CHIM/08	RELATED	
	- Industrialization and Regulatory aspects	6	CHIM/09	SPECIALISED	
	Advanced Pharmacology	6	BIO/14	SPECIALISED	
	Elective courses**	9		ELECTIVE	
	Final exam	30		FINAL EXAM	

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Recommended elective course (3 CFU)

Experimental pharmacology– BIO/14

Specific applications of nanomedicines – CHIM/09

Specific applications of inorganic nanomedicines – CHIM/03