



**UNIVERSITÀ DI PAVIA**  
**Dipartimento di**  
**Biologia e Biotecnologie**  
**“Lazzaro Spallanzani”**

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

**MASTER’S DEGREE IN**  
**NEUROBIOLOGY**  
**Class LM-6 Biology**

**2024/2025 academic year cohort**

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Study plans

## **PART ONE – GENERAL PROVISIONS**

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

1. The Master's degree course in Neurobiology, activated by the University of Pavia's "L. Spallanzani" Department of Biology and Biotechnology, under LM-6 class of Masters degrees in Biology, 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 Neurobiology are governed by this text, by the Statute of the University of Pavia, the General University Regulations, the University Didactic Regulations, the Student career Regulations (<https://portale.unipv.it/it/ateneo/organizzazione/statuto-e-regolamenti>) and the Regulations of the "L. Spallanzani" Department of Biology and Biotechnology at the University of Pavia (<https://dbb.dip.unipv.it/en>).
2. 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. In compliance with the competences and criteria established by the Regulations indicated in art. 2, as well as the provisions of the Regulations for the composition and functioning of the Didactic Councils, the competent body for the didactic and organisational coordination of the degree course is the Didactic Council of Biological Sciences, hereinafter referred to as the Didactic Council, without prejudice to the competences of the "L. Spallanzani" Department of Biology and Biotechnology.
2. The head of the course of study's educational and organisational activities is assumed by a member of the teaching staff designated for this purpose by the Didactic Council, without prejudice to the collegiality of decisions and guidelines. The course manager is indicated by name in the Annual Study Programme form.
3. The management group AQ (Quality Control) is made up of a degree course (CdS) Coordinator, at least one student representative, at least one member of the technical-administrative (PTA) staff and one member of the course of study's teaching staff.

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

The administrative support of the course of study is entrusted to the competent Student Administration Office and to the Didactics Office at the "L. Spallanzani" Department of Biology and Biotechnology.

The UOC Carriere Studenti, the UOC Immatricolazioni e informastudenti and the UOC Admission office will handle the information relating to the student's career (enrolment, transfers, etc.),

Information available at the following links:

<https://en.unipv.it/en/education/bachelors-and-masters-degree-programs>

<https://en.unipv.it/en/education/bachelors-and-master-degree-programs/degree-programs>

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: <https://orienta.unipv.it/>

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

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

1. The Annual Study Programme form can be consulted at: <https://sonl.unipv.it/ava/index.php/2024SUA08420.pdf>

### **Art. 6 – Admission requirements**

1. To be admitted onto the Master's degree course, students must hold a three-year university degree 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.
3. Graduates in class 1 (Biotechnology) and 12 (Biological Sciences) (Ministerial Decree 509), and in classes L-2 (Biotechnology) and L-13 (Biological Sciences) (Ministerial Decree 270) possess adequate academic requirements for enrolment onto the Master's degree course in Neurobiology.
4. In order to allow access to other highly trained graduates from courses not perfectly consistent with the required requirements, a different entry path and/or specific admission test may be envisaged.

All students are also required to 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, even also with reference to disciplinary lexicons. Graduates from other classes will be required to have at least 30 CFUs in the SSD BIO / 06, BIO / 09, BIO / 11, BIO / 14 and BIO / 18 scientific areas.

5. No verification is required for access to the LM in Neurobiology for students who have graduated in class 1 (Biotechnology) and 12 (Biological Sciences) (Ministerial Decree 509), and in class L-2 (Biotechnology) and L-13 (Biological Sciences) (Ministerial Decree 270), with a mark of not less than 92/110.
6. In all other cases, an interview will be held in order to evaluate students' level of preparation.
7. Any additional educational obligations established during the assessment are assigned in the form of CFUs to be acquired in specific disciplinary sectors and/or by passing exams identified for the purpose. These must be passed by the end of February and, in any case, before enrolment.

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

1. In accordance with current legislation, training activities that are part of the course of study result in the acquisition, by the students who take them, of university training credits (CFUs).
2. 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.
3. 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 training 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:
  - a. for ex-cathedra lessons, 8 hours dedicated to lectures or equivalent teaching activities and 17 hours to individual study;
  - b. in cases of laboratory teaching activities, seminars and exercises, 12 hours are dedicated to lectures and 13 hours dedicated to individual study.

4. Students acquire credits corresponding to each training activity by passing exams or following another form of verification of the preparation or skills acquired.
5. The period of validity of the acquired credits is the number of years provided for in the Student career Regulations (Article 30) for the forfeiture of student status. After this deadline, the Didactic Council provides for forms of verification of the credits acquired in order to evaluate whether the content and knowledge is obsolete.
6. For some of the teachings offered, such as the courses on soft skills and the Sustainable Development Goals – SDG, as per the 2030 Agenda for Sustainable Development of the United Nations: by passing the exam, in addition to the registration of the related credits (CFU), an open badge can be envisaged, a digital certificate as a proof of knowledge, competencies and abilities gained during the course. The certificate will be issued automatically after the registration of the exam and will be sent to the student's University of Pavia email address.
7. Teaching is organised across two semesters:
 

October - January	March - June
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8. Examination sessions are scheduled in the following periods:  
 January 15th – end of February      June 15th – end of July      September 1st – end of September  
 6 sessions are timetabled.
9. There are at least two exam sessions, outside the sessions referred to in point 7, reserved for students who have already completed the second year of the course of study.
10. For student-athletes competing in disciplines recognised by the Italian National Olympic Committee or by the Italian Paralympic Committee, extraordinary exam sessions may be set at the request of the interested parties. These substitute those scheduled if they coincide with sporting commitments at a national level. Sporting commitments resulting in failure to participate in ordinary exam sessions must be documented to the President of the Didactics Council who will proceed, in agreement with teaching staff, to organise an extraordinary exam session.
11. The calendars of lectures, exams and graduation sessions are published respecting Ministerial deadlines, as reported in the Annual Study Programme form.
12. At least 8 graduation sessions are scheduled per calendar year.

## **Art. 8 – Study plans**

1. Information relating to the study plan can be consulted at the following link <https://en.unipv.it/en/education/bachelors-and-master-degree-programs/after-your-course/study-and-exams>
2. Standard study plans are approved *ex officio*, i.e. they comply with the rules indicated in Attachment 1 of these Regulations, except for the training activities referred to in letter a), paragraph 5 of art. 10 of Ministerial Decree dated 22 October 2004 n. 270, chosen independently by the student from the activities offered by the University, for which the Academic Board assesses the consistency with the training project, also taking into account the adequacy of any reasons given 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.  
 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.
4. There are no study plans envisaged for part-time enrolled students.
5. In addition to the courses necessary for the graduation, it is possible to include a maximum of 24 credits (CFU) of extra learning activities to the study plan per academic year, except for the

medical area courses of nationally restricted access and the psychology area courses, as long as the course propaedeutic rules are followed.

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 credits) as part of the additional language skills of the TAF F.

The following students are exempt:

- 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 at least a level B1 Italian language certification.

Italian students and foreigners referred to in points 1), 2) and 3), will cover the 3 credits of the aforementioned TAF with the "Other activities" training activity.

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

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

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

1. Attendance of lectures is not mandatory but it is highly recommended. Students must attend no less than 75% of practical exercises.
2. The prerequisites between the courses are:
  - “Membrane biophysics and electrophysiology” is preparatory for “Cellular and advanced systemic neurophysiology”
  - “Human neuroanatomy” is preparatory for “Neurobiology of brain disorders”.
  - “Neurochemistry, neuropharmacology and neurogenetics” is preparatory for “Neuropsychopharmacology”.

Students will not be able to take the exam with a prerequisite until they have passed the preparatory exam. The placement of the courses in particular course years, and in the respective semesters, is compatible with the prerequisites.

### **Art. 11 – Students’ open 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 Academic Board may reserve the right to assess whether these courses are consistent with the educational objectives of the Master’s degree course. If the choice is made from the courses in the appropriate list in Attachment 1, the consistency with the Degree course is recognized *ex officio*.
2. It is allowed to include, among the freely chosen activities, courses belonging to the educational offer of the three-year and master's degree courses, with the exception of those pertaining to the educational offer of the medical and health area with national planning and the psychology area. The student will not be able to choose courses already taken during previous university attendance, unless they have obtained specific validations of the same.

3. Students are allowed to include in the study plans, as elective courses, courses taught at the University colleges if accredited by the University on the basis of art. 27 of the University Didactic Regulations.

5. According to recent ministerial decrees, among elective activities, students are allowed to choose at least 3 courses in Italian. These courses can be selected in the frame of the didactic teaching of the university or specifically set up courses.

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

1. No Didactic internships are envisaged.

2. It is possible to recognise extra-curricular internships within training course credits as "Elective choice" or "Supernumerary" credits. This recognition is subject to the evaluation of the Didactic Council which will establish the credits to be accredited for the activity.

#### **Art. 13 – Exams and final mark**

1. The course of study cannot include more than 12 exams or final marks.

2. The counting of the exams or final marks includes the characterizing, cognate, 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). 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.

3. The exams are given in oral and / or written form.

4. The student will not be able to take the exam associated with a required course until he or she has passed the prerequisite exam for that course. The placement of the courses during the course years and within the respective semesters must be compatible with the prerequisite courses.

5. The exams involve an evaluation expressed in thirtieths and reported in a special register. The academic credits 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. Based on the art. 30, comma 1 of the Students' Careers Regulation, it is necessary to register the evaluation of the exam even when it is negative.

6. In the case of written tests, the student may withdraw at any time during the entire duration of the exam. In the case of oral exams, the student is allowed to withdraw up until the time the final mark is given.

7. The student's decision not to accept a grade equal to or greater than 18/30 is irrevocable.

8. The student cannot take more than two exams during the same exam session.

9. Students may not repeat an exam that has already been passed to get a higher mark.

10. The evaluation of the activities referred to in points (a) and (b) below shall be expressed as follows:

a) Laboratory activities included among the "elective" courses: declaration by the teacher in charge of the laboratory course in the form of a "Pass" or "Fail" mark.

b) Additional knowledge: statement from the thesis supervisor that includes an evaluation expressed as "Approved" or "Not approved".

#### **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.

2. The average of the marks from the exams and other educational activities is a weighted average, to which a mathematical rounding is applied.

Excluded from the calculation of the final average are extra educational activities, educational activities that do not involve a non-numerical evaluation, and failed courses. For purposes of the overall average, the mark of 30/30 *cum laude* counts as 30.

The final exam, to which 24 credits are attributed, consists in the writing and discussion by the student of a thesis containing original data under the guidance of a supervisor and, possibly, one or two co-supervisors. The thesis is then discussed in public session before a special Commission appointed by the Director of the Department. The final mark for the thesis is determined jointly by the Commission, with a maximum mark of 110. The sum of the marks available to the Commission may not exceed 8 points. This sum is added to the curricular mark calculated as a weighted average based on the number of credits and the marks from the final exams of the curriculum, with a maximum mark of 110. If the final mark is 110, *cum laude* may be requested, which must be granted unanimously.

3. The final thesis must be written and discussed in English. It is therefore necessary to meet the following conditions:

- a) an "abstract" written in Italian and summarizing the content of the thesis must be attached
- b) the title must be written both in English and Italian.

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

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

1. Any recognition of credits acquired by the student in the manner provided for under Art. 14 of Law 240/2010, of the types referred to in paragraphs 2) and 3 below), must be approved by the Didactic Council. Recognition is carried out exclusively based on the student's individual knowledge and skills; any form of collective recognition is excluded.

2. The Didactic Council, considering the need for cultural training and professional preparation, may validate duly certified knowledge and skills for a maximum number of 12 credits, entailing:

- a. professional knowledge and skills, individually certified in accordance with current legislation on the subject, not to exceed 6 credits;
- b. knowledge and skills gained in post-secondary level training activities that have been designed by a university, for a maximum of 12 credits;

3. At the request of the student and based on the criteria and procedures established by the Academic Senate, the following activities, up to a maximum of 12 credits, may also be recognized as university credits within the category of elective activities of the study plan (TAF D) or other activities:

- a) sport practiced at the Olympic, world, and European level, up to a maximum of 6 credits;
- b) sport practiced at the national level in Italy and intermediate categories, up to a maximum of 3 credits;
- c) 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 credits.

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

1. Pursuant to Article 46 of the University Didactic Regulations, in the event of a transfer from other courses of study of the same class or of different classes, the recognition of the students’



academic record, as well as the possible validation of any educational credits, is subject to approval by the Didactic Council.

2. The validation of the credits must be approved by the Didactic Council on a case-by-case basis following an investigation by one or more teachers delegated to this task by the Council itself. The type and number of credits deemed to be valid are established based on criteria of disciplinary relevance. To this end, the application for recognition must be accompanied by official documentation; the teachers appointed to validate such recognition can undertake further checks deemed appropriate.

3. Pursuant to Article 48 of the University Didactic Regulations, the recognition of educational activities carried out at foreign universities must be approved by the Didactic Council.

The recognition of educational credits acquired in relation to educational activities and exams taken at accredited foreign universities is evaluated on a case-by-case basis following an investigation conducted by one or more teachers delegated to this task by the Council itself.

4. Academic qualifications obtained at foreign universities can be declared equivalent to corresponding ones issued by the University of Pavia based on specific provisions contained in international conventions. In the absence of such conventions, the Department may approve, on the proposal of the Didactic Council regarding the congruence of the courses followed, the full equivalence of the qualification obtained.

5. The period of validity of the credits acquired is equal to the number of years after which the status of student is relinquished, as provided for in the Student career Regulations. After this deadline, the Didactic Council provides for forms of verification of the credits acquired to evaluate whether the knowledge content of the course in question has become obsolete.

6. In case of renunciation or forfeiture of student status, the recognition of the credits acquired is decided on by the Didactic Council, case-by-case, based on an investigation conducted by one or more teachers delegated to this task by the Council itself.

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

1. The periods of study carried out by students enrolled in the master's degree in Neurobiology at foreign universities as part of Erasmus+ Programs and International Mobility Programs recognized by the University through international agreements are recognized as an educational activity on a par with that offered by the course of study at Pavia when there is the same commitment from the student and provided that the educational contents are consistent with the educational path in question.

2. The "Learning Agreement" or the "Training Agreement" are the documents that define the project regarding the training activities to be followed abroad that will replace some of the activities envisaged for the course of study. The possibility of the recognition of credits acquired abroad is established in advance through the "Learning Agreement" or the "Training Agreement", which are signed for approval by the international mobility delegate and by the student for teaching and training activities carried out abroad. It is the responsibility of the supervisor to ensure the consistency of the "Learning Agreement" or the "Training Agreement" with the training objectives of the course of study.

3. The equivalence of the study plan of the courses to be taken abroad with courses in the study plan for the degree in Neurobiology must be approved by the supervising professor with a written declaration.

4. At the end of the period abroad, the Didactic Council, at the request of the student and based on the results achieved and adequately documented through the "Transcript of Records", recognizes the training activity carried out abroad and any marks obtained.

5. The Didactic Council will proceed with the recognition of the direct correspondence between one or more educational activities present in the study plan and one or more educational activities whose credits have been acquired at the foreign university.
6. For each exam taken under the Erasmus+ Programs and International Mobility Programs recognized by the University, the Didactic Council will assign a mark corresponding to the judgment of merit obtained abroad. In the case of different criteria for the assignment of marks, reference is made to the ECTS (European Credit Transfer System) credit system.
7. The study and research activity undertaken abroad to prepare for the final exam can be recognized, provided that it is carried out with the methods and commitment similar to the provisions contained in the regulations for the course of study and it is appropriately certified.
8. As part of the Erasmus Traineeship Program or internship programs abroad recognized by the University, at the request of the student and with the approval of the competent Didactic Council, 5 credits can be awarded for each month abroad up to a maximum of 60 credits (12 months), subject to the favorable opinion of the supervisor and in relation to the quality of the internship carried out. If the number of credits recognized exceeds that required for the degree thesis / final exam, the excess credits may be recognized as surplus credits.
9. The student can carry out periods of study abroad relating to mobility programs which are not provided for in the specific regulations to prepare the degree thesis, provided they are previously approved by the thesis supervisor with a written declaration sent to the Student Secretariat to regularize the student's insurance position.

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

There are no conditions that affect registration in subsequent years.

#### **Art. 19 – Certifications**

There is no provision for the recognition of any certifications.

**UNIVERSITY OF PAVIA – 'LAZZARO SPALLANZANI' DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY**

**Study Plan, Master's degree in Neurobiology – Cohort 2024-25**

LM-6 – Category of Master's degree in Biology

**YEAR I (48 CREDITS)**

COURSE	CREDITS	SEMESTER	SSD	TAF
Comparative neurodevelopment and neural stem cells	6	I	BIO/06	Characterising
Membrane biophysics and electrophysiology	9	I	BIO/09	Characterising
Human neuroanatomy	6	I	BIO/16	Characterising
Cellular and advanced systemic neurophysiology	9	II	BIO/09	Characterising
Cellular neurobiology and advanced methods in neuroscience (Integrated AF broken down into modules):  <ul style="list-style-type: none"> <li>- Mod. 1: Cellular Neurobiology</li> <li>- Mod.2 Advanced Methods in Neuroscience</li> </ul>	9	II	3 CFU BIO/06  6 CFU BIO/18	Cognate  Characterising
Neurochemistry, neuropharmacology and neurogenetics	9	II	BIO/14	Characterising

**YEAR II (72 CREDITS)**

COURSE	CREDITS	SEMESTER	SSD	TAF
Computational neuroscience	6	I	BIO/09	Characterising
Neurobiology of brain disorders	9	I	MED/26	Cognate
Neuroimmunology and molecular neurobiology	9	6 credits - I + 3 credits - II	BIO/06	Characterising
Student must add in the study plan 9 elective credits (TAF D) choosing from: <ul style="list-style-type: none"> <li>- 3 lab courses of 3 credits each</li> <li>- a 9 credits lab course</li> <li>- a 9 credits course or a 6 credits course + a 3 credits lab course.</li> </ul> The 9 and 6 credits course can be chosen from the ones listed below* (below is a list of lab courses offered by the degree course)	9	I/II		Elective

Neuropharmacology	6	II	BIO/14	Characterising
Neural basis of behaviour and neuropsychology	6	II	M-PSI/02	Cognate
Other activities or Italian for foreigners	3	II		Other
Final exam	24	II		Final exam

### LIST OF 9 CREDITS LAB COURSES

COURSE	CREDITS	SEMESTER	SSD	TAF
Laboratory of Zoology	9	I	BIO/05	Elective
Laboratory of Comparative Anatomy and Cytology	9	I	BIO/06	Elective
Laboratory of Physiology	9	I	BIO/09	Elective
Laboratory of Biochemistry	9	I	BIO/10	Elective
Laboratory of Molecular Biology	9	I	BIO/11	Elective
Laboratory of Pharmacology	9	I	BIO/14	Elective
Laboratory of Genetics	9	I	BIO/18	Elective
Laboratory of Microbiology	9	I	BIO/19	Elective
Laboratory of General Pathology	9	I	MED/04	Elective
Laboratory of Immunology	9	I	MED/04	Elective
Laboratory of Bioinformatics	9	I	BIO/11	Elective

### LIST OF 3 CREDITS LAB COURSES

COURSE	CREDITS	SEMESTER	SSD	TAF
Laboratory of Zoology	3	I	BIO/05	Elective
Laboratory of Comparative Anatomy and Cytology	3	I	BIO/06	Elective
Laboratory of Physiology	3	I	BIO/09	Elective
Laboratory of Biochemistry	3	I	BIO/10	Elective
Laboratory of Molecular Biology	3	I	BIO/11	Elective
Laboratory of Pharmacology	3	I	BIO/14	Elective
Laboratory of Genetics	3	I	BIO/18	Elective
Laboratory of Microbiology	3	I	BIO/19	Elective
Laboratory of General Pathology	3	I	MED/04	Elective
Laboratory of Immunology	3	I	MED/04	Elective
Laboratory of Bioinformatics	3	I	BIO/11	Elective

\*

**Suggested free choice courses:**

- Advanced microscopy (BIO/06 – 6 CFU)
- Statistics and big data analysis (BIO/11- 9 CFU)
- Bioinformatics (ING-INF/06 – 6 CFU)
- Radiation Biophysics and Radiobiology (MED/36 – 6CFU)
- Data science in everyday practice (BIO/11 – 3 CFU)

**Alternatively, students can choose between courses taught at the University of Pavia, except the medical and health areas courses with nationally restricted access and the psychology area courses.**