



UNIVERSITY OF PAVIA

DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY 'L. SPALLANZANI'

## COURSE REGULATIONS

(art. 12 – M. D. no. 270, 22 October 2004)

## SECOND CYCLE DEGREE COURSE IN MOLECULAR BIOLOGY AND GENETICS

Class LM-6 Biology

Entering class 2018/2019

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## **PART ONE – GENERAL PROVISIONS**

### **Art. 1 – Name, class, department and duration**

1. The second cycle degree course in Molecular Biology and Genetics, set up by the Department of Biology and Biotechnology “L. Spallanzani” of the University of Pavia, belongs to class LM-6 of second cycle degree courses in Biology, in accordance with Ministerial Decree of 16 March 2007.
2. The duration of the second cycle degree course is two years.

### **Art. 2 – Regulatory texts**

1. In accordance with the freedom of teaching and the rights/obligations of teaching staff and students, the course organization and the carrying out of training activity envisaged for the second cycle degree course in Molecular Biology and Genetics is regulated by the present text, by the Statute of the University of Pavia, by the general University Regulations, by University Didactic Regulations, by Student Regulations (<http://www.unipv.eu/site/home/ateneo/statuto-e-regolamenti.html>) and by the Regulations of the Department of Biology and Biotechnology “L. Spallanzani” of the University of Pavia (<http://dbb.unipv.it/>).
2. For all matters not expressly provided for in these Regulations, the existing provisions of the law apply.

### **Art. 3 – Body responsible for didactic and organizational coordination**

1. In respect of the competencies and criteria established by the Regulations listed in Art. 2, as well as those covered by the Regulations for the organisation and operations of the Teaching Boards, the body responsible for coordinating teaching and organization of the degree course is the Teaching Council of Biological Sciences, hereinafter referred to as the Teaching Council, subject to the authority of the Department of Biology and Biotechnology “L. Spallanzani”.
2. Responsibility for didactic activity and organization of the course (CdS) is assumed by a member of the teaching staff who is nominated for that purpose by the Teaching Council, without prejudice to the collegiality of the decisions and guidelines. The person responsible for the course is named on the Annual degree-programme report.
3. In accordance with the freedom of teaching and the rights/obligations of teaching staff and students, the course organization and the carrying out of training activity envisaged for the second cycle degree course in Molecular Biology and Genetics is regulated by the present text, In accordance with the freedom of teaching and the rights/obligations of teaching staff and students, the course organization and the carrying out of training activity envisaged for the second cycle degree course in Molecular Biology and Genetics is regulated by the present text,.

### **Art. 4 – Administrative services**

1. Administrative support for the course is entrusted, to the extent applicable, to the relevant Students’ Office and the Office of the Department of Biology and Biotechnology "L. Spallanzani".

The Student Administration Office deals with the administrative management of students' courses, from the moment they enter university right up until graduation (registrations, transfers, taxes, recognition of qualifications, student mobility, etc.). It is located in Via Ferrata 5, Pavia. The site can be consulted at: <http://www.unipv.eu/site/home/naviga-per/studenti/segreteria-studenti-e-ufficio-tasse/segreteria-studenti-di-facolta/scienze-matematiche--fisiche-e-naturali.html>

The Orientation Centre (C.OR.) manages activities and projects to help students in the choice of their university studies, to support their courses, to facilitate entry into the world of employment. To this end it organizes collective actions, individual counseling services, and orientation meetings. The C.OR. website can be consulted at: <http://cor.unipv.eu/site/home.html>

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

### **Art. 5 – Annual degree-programme report**

1. The Annual individual study-plan card is available at the following link:  
<https://sonl.unipv.it/ava/index.php/2018SUA08412.pdf>

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

#### 1. Curricular requirements

- To be admitted to the second cycle degree course, students must be in possession of a three-year university degree or diploma, or other academic qualifications obtained abroad and recognised by the competent bodies of the University. Students are also requested to have a knowledge of the English Language at CEF (Common English Framework) B1 level. Students can prove to have sufficient knowledge successfully passing an exam from this study course, which is entirely taught in English.

- To register for the second cycle degree course, the student is also expected to meet certain curricular prerequisites and adequate individual preparation.

a) Graduates in classes 1 (degrees in Biotechnology) and 12 (degrees in Biological Sciences) (DM 509), and in classes L-2 (Biotechnology) and L-13 (Biological Sciences) (DM 270) possess adequate curricular requirements for enrolment in the second cycle degree course in Molecular Biology and Genetics.

b) Graduates in other classes and foreign students must have acquired sufficient knowledge in:

- the disciplines of mathematics, physics and informatics: 12 credits;
- chemical disciplines: 15 credits;
- biomolecular disciplines: 18 credits;
- other biological disciplines: 12 credits.

c) Owing to the heterogeneity and the different organization of study courses abroad, the curriculum of students from within and without the European community will be examined by a special Commission in order to assess its compliance with the requirements.

## 2. Evaluating the preparation of the student

- students who graduated with a mark equal to, or higher than 92/100 in classes 1 (degrees in Biotechnology) and 12 (degrees in Biological Sciences) (DM 509), and in classes L-2 (Biotechnology) and L-13 (Biological Sciences) are automatically admitted to the course.

- students who do not fall into the category referred to in the above paragraph (those with a mark lower than 92/100, and graduates of other classes) are subject to verification.

- Such verification takes the form of a pre-assessment of curricular requirements by a special Commission, and an admission test consisting of an interview with members of the Commission. For foreign students, the interview may be carried out online, taking into account specific prior training.

## 3. Method of recovering educational debts

- In the event that the preparation of the student is judged not entirely adequate, the Commission may require the passing of examinations relative to three-year, first cycle degree programmes. The recovery of educational debts must occur by the end of February and, in any event, prior to registration.

## **Art. 7 – Didactic organization**

1. Training activities that are part of the second cycle degree course lead to the acquisition, by the students who undertake them, of university credits (CFU) in accordance with prevailing regulations.

2. The average workload and study-time for a student engaged in full-time university study activities is conventionally established at 60 credits (CFU) per year.

3. Each credit granted in the course corresponds to an average total of 25 hours work, of which at least 50% is set aside for personal study or other activities involving individual learning. (except in cases where highly experimental or practical educational activities are envisaged). For each credit, the correspondence between the hours of teaching imparted in the degree course and the hours reserved for individual study is as follows:

a. in the case of *ex-cathedra* tuition, 8 hours for lectures or equivalent activities and 17 hours dedicated to individual study;

b. in the case of laboratory activity, seminars, tutorials etc, 12 hours for lectures and 13 hours dedicated to individual study.

4. The credits corresponding to each educational activity are acquired by the student upon passing an examination, or following other forms of verification of preparation or of skills acquired.

5. The period of validity of credits earned is equal to the number of years specified in the Student Regulations (Art. 31, comma 1) before loss of student status. After that period, the Department Council provides methods of verifying credits earned in order to assess that the student's knowledge is not obsolete.

6. Teaching activity is organised in two semesters:

October – January; March - June

7. The examination sessions are scheduled in the following periods:

15 January – end of February; 15 June – end of July; 1 September – end of September

There are six separate exam dates.

8. At least two of these exam dates are set outside the sessions referred to in paragraph 7; they are reserved for students who have already satisfactorily attended the 2nd year of the course.

9. For student athletes involved in disciplines recognized by the Italian National Olympic Committee or by the Italian Paralympic Committee, additional exam dates are set, at the request of the interested parties, to replace those on the calendar should these coincide temporally with sporting commitments that are at least of national importance. The President of the Teaching Council, who must be provided with documented evidence of commitments that prevent participation at regularly timetabled exams, shall arrange for the organisation of an additional exam date after consultation with the lecturer involved.

10. The timetable of lessons, examinations and sessions for the defence of the thesis is announced in accordance with ministerial deadlines, as shown on the Annual Individual Card.

11. There are at least eight sessions for the defence of the thesis each calendar year.

### **Art. 8 – Study plans**

1. All students are required to submit their study plans by the deadlines specified annually by the University.

2. Standard study plans, i.e. those that conform to the rules set out in *Appendix no.2* of the present Regulations, are approved automatically, except for the training activities referred to in subparagraph a), paragraph 5 of Article 10, Ministerial Decree n. 270 of 22 October 2004, which are autonomously chosen by the student from among the activities offered by the University; for these activities the Teaching Council assesses their coherency with the program, taking into consideration the adequacy of the motivations that may be put forward by the student.

3. Students who intend to follow an educational program different from that provided for in these Regulations can submit, while respecting the constraints laid down by the declaration of the class of the degree course and by the organisation of the course itself, an individual study plan by the deadlines established annually by the University.

The individual study plan must be approved by the Teaching Council, which will take account of the requirements of the student in terms of cultural development and professional training, and may suggest appropriate changes in order to make the training more consistent with the specific objectives of the course.

4. Study plans for part-time students are not envisaged.

5. For the general rules governing the presentation of the study plan, see Art. 17 of the Student Regulations.

#### **Art. 9 – Joint-degree programmes**

1. There are no agreements or programmes directed towards obtaining a double degree.

#### **Art. 10 – Attendance and curricular prerequisites**

1. Attendance at lectures is not mandatory, but is strongly recommended.

2. There are no curricular prerequisites.

#### **Art. 11 – Student elective activities**

1. Students enrolled in the second cycle degree course are allowed the inclusion of 12 credits of their own choice (under Article 10, paragraph 5.a, Decree 270/2004 - called "TAF D") in their study plans. Students can choose from among the subjects offered on the University syllabus, and the Teaching Council may reserve the right to evaluate the compatibility of these subjects with the objectives of the second cycle degree. If the choice involves subjects on the special list in Attachment 2, which are consistent with the degree program, then it is automatically approved.

2. Subjects belonging to *numerus clausus* courses, both at local and national level, with the exception of *numerus clausus* courses in the medical field on a national level, and subjects belonging to three-year, first cycle degree courses, are among the activities that can be freely chosen by students (Article 10, paragraph 5.a, Decree 270/2004 - called "TAF D").

3. Students cannot choose subjects already taken during previous periods of university study, unless they have obtained specific validations for these beyond the 180 credits required for the attainment of the three-year degree. The offices responsible will verify the correct application of the rule by students prior to their sitting of the final exam. In the event of violation of the above rule, students shall not be permitted to sit their final exam and shall be obliged to modify their study plan.

4. Students are permitted to include in their study plans, as elective activities, subjects offered at University Colleges if these are accredited by the University under Art. 29b of its Teaching Regulations.

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

1. There is no curricular internship.

2. "Elective" or "excess" university credits (CFU) that are attainable through extracurricular internships within the CFU of the syllabus may be recognised. Such recognition is subject to the

evaluation of the Teaching Council, which will also determine the number of CFUs attributable to the activity.

**Art. 13 – Examinations and end-of-course assessments**

1. No more than a total of 12 examinations or final assessments can be considered.
2. Examinations are conducted in English.
3. Core subjects, similar and integrative subjects, and subjects chosen by the student should be taken into consideration in the calculation of final examinations or assessments. Examinations or final assessments related to these activities are considered in the count as corresponding to one unit (even if the credits give rise to more examinations or final evaluations).
4. The set of training activities referred to in subparagraphs c), and d) of paragraph 5, Article. 10 of Ministerial Decree no. 270 / 2004, are not included when calculating the maximum number of final examinations or assessments; the tests provided for such activities must not exceed 5 in number, including the final defence of the degree.
5. Examinations involve an evaluation that must be expressed in a mark out of thirty and then entered in the appropriate register. Credits are considered acquired if the mark is equal to or greater than 18/30. In the case of a maximum score of 30/30, the examination commission may unanimously concede the awarding of a 'commendation'.
6. In the case of written examinations, students are permitted to withdraw at any moment while the exam is in progress.
7. In the case of oral examinations, students are permitted to withdraw, as specified in the University Regulations, at least up until the moment just before the registration of the final mark. If students have withdrawn or have failed the exam, any annotations in the register, which can be utilised for statistical purposes, are not transcribed in the students' record books, nor do they appear in their academic transcripts.
8. The repetition of an exam that has already been passed, with the possible modification of the relative evaluation, is not permitted.
9. The decision, on the part of the student, not to accept a vote of 18/30 or higher, is irrevocable.
10. Students cannot sit the same exam more than twice in the same examination session.
11. Examinations or assessments related to the activities chosen by students are considered as corresponding to one unit (even if the credits may give rise to further tests or evaluations).
12. The verification of the activities referred to in the following points is expressed as follows:
  - a) Laboratory activities included amongst "Free activities": declaration by the teacher in charge, evaluation "suitable" or "Not suitable".
  - b) Informatics skills: statement by the thesis supervisor, evaluation "Approved" or "Not approved".



c) Internship for thesis: statement by the thesis supervisor, evaluation "Approved" or "Not approved".

#### **Art. 14 – Final examination and awarding of degree**

1. The degree is awarded after passing a final examination, which will tend to verify the attainment of the learning objectives of the course.
  2. It is obligatory to carry out experimental work for a total of 38 credits (CFU) under the tutelage of a teacher from the degree course in Biological Sciences and Biotechnology in preparation for the thesis. This activity shall involve the study of a biological system by means of genetic, molecular, biochemical or cellular methodologies.
  3. The final examination, which carries 38 CFU, consists of the preparation, presentation and discussion, on the part of the student, of a thesis elaborated in an original way under the guidance of a supervisor. The final exam shall be written and discussed in English.
  4. The thesis must be presented by a supervisor and possibly also a co-supervisor, even from outside the university.
  5. The final mark of the second cycle degree (from a minimum of 66 points to a maximum of 110, with possible *cum laude*) is assigned by a special commission, appointed by the Head of the Department, in a session that is open to the public; it takes into account the student's entire course of studies.
- To determine the overall mark of the final exam, the grade assigned by the Commission, amounting to a maximum score of 8, is added to the weighted average of the curricular marks. If the final mark is one hundred and ten, *cum laude* may be granted, but it must be conceded unanimously.

### **PART THREE – PROVISIONS REGARDING STUDENTS' COURSE OF STUDY**

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

1. The eventual recognition of credits obtained by the student in the ways prescribed by Art. 14 of Law 240/2010, for the types set forth in paragraphs 2) and 3), shall be decided by the Teaching Council.
2. The Teaching Council, taking into account the requirements of the student in terms of academic and personal preparation, can validate duly-certified knowledge and skills with up to 12 CFU, of which:
  - a. no more than 6 credits for knowledge and skills that have been individually certified under existing legislation;
  - b. no more than 12 credits for knowledge and skills acquired through educational activities at a post-secondary level that have been organised in part by a university.
3. At the request of the student, and on the basis of the criteria and procedures established by the Academic Senate, the following activities may also be recognized as university credits inasmuch as they constitute free choice curriculum activities (TAF D):a) sports practiced at the Olympic, world

and European level, up to a maximum of 6 credits;b) sport played at the Italian level, and in intermediate categories, up to a maximum of 3 credits;c) qualification for "zone medals" at university championships, as well as the taking part in competitive sports for sections of the Pavia CUS, including participation in regional and national competitions, up to a maximum of 6 credits.

#### **Art. 16 – Criteria for recognition of credits earned**

1. In accordance with Art. 49 of the Course Regulations of the University, in the event of students passing / transferring from other courses in the same class or from different classes, the Teaching Council shall decide as regards the recognition of studies already undertaken as well as the possible validation of credits that can be regarded as recognisable.

2. The validation of credits is decided by the Teaching Council, case by case, on the basis of an inquiry conducted by one or more teachers delegated by the Council. The type and number of recognisable credits is established on the basis of relevance to the subject. To this end, the application for recognition must be accompanied by official documentation; the teachers delegated to validate credits may carry out any further checks that they deem appropriate.

3. In accordance with Art. 51 of the Academic Regulations, the recognition of educational activities carried out at a foreign university is deliberated by the Teaching Council.

The recognition of credits acquired in connection with activities of study and examinations taken at foreign universities of proven qualification is evaluated case by case, based on an inquiry conducted by one or more members of the teaching staff who have been delegated by the Council itself.

4. Academic qualifications obtained at foreign universities can be considered equivalent to the correspondent qualifications issued by the University of Pavia, on the basis of specific provisions contained in international conventions. In the absence of agreements, the Department may deliberate, on a proposal from the Teaching Council in relation to the coherence of the studies carried out, the full equivalence of qualification attained.

The period of validity of credits earned is equal to the number of years specified in the Student Regulations before loss of student status. After that period, the Department Board provides methods of verifying credits earned in order to assess that the student's knowledge is not obsolete.

6. In the event of withdrawal or loss of student status, the recognition of credits earned is decided by the Teaching Council, case by case, on the basis of an inquiry carried out by one or more members of the teaching staff who have been delegated by the Council itself.

#### **Art. 17 – Criteria for recognition of educational activities undertaken at foreign universities**

1. Periods of study undertaken by students of the Second Cycle degree in Molecular Biology and Genetics at foreign universities under the Erasmus Mobility Study and Erasmus Traineeship

programme are recognized as training activities similar to those offered within the course, with the same commitment required of the student, provided that the contents are consistent with the educational programme.

2. The "Learning Agreement" and the "Training Agreement" are documents that define the training activities that will be undertaken abroad and that will replace some of the activities envisaged by the degree course. The possible recognition of credits earned abroad is established in advance through the "Learning Agreement" or "Training Agreement", which are signed for approval by the staff member designated by the Department of reference as the Coordinator for the studies carried out abroad. It is the responsibility of the Coordinator to ensure the coherence of the "Learning Agreement" or "Training Agreement" with the educational objectives of the course.

3. The equivalence of the subjects to be studied abroad with that of the subjects provided in the degree course must first be approved by the lecturer in a written statement.

4. At the end of the period spent abroad, the Teaching Council, at the request of the student and based on the results achieved and adequately documented in the "Transcript of Records", recognizes the training activity carried out abroad and any mark awarded.

5. The Teaching Council shall proceed with the recognition of the direct correspondence between one or more training activities in the study plan and one or more training activities whose credits have been acquired at the foreign University.

6. For each exam taken as part of the Erasmus Mobility Study and Placement programme, the Teaching Council assigns a mark corresponding to the evaluation of merit obtained abroad. In the presence of different criteria for the allocation of marks, reference is made to the correspondence in the ECTS (European Credit Transfer System) system of credits.

7. Study and research activity conducted abroad in preparation for the final exam can be recognized provided that it is carried out with the same method and commitment as envisaged by the provisions of the Regulation of the degree course, and appropriately certified.

8. At the request of the student, and upon approval by the Teaching Council in charge, 5 CFU for each month spent abroad as part of the Erasmus Mobility Study and Erasmus Traineeship programme (up to a maximum of 60 credits for 12 months) can be recognized subject to approval by the Coordinator in relation to the quality of the training that has taken place.

In the event that the number of CFU that are recognized exceeds that set for the thesis / final examination, the excess credits may be recognized as being supernumerary.

9. For the preparation of their theses, students may undertake periods of study abroad that are not envisaged in the special regulations relating to mobility programs, provided that this has been

previously approved by their thesis supervisors in a written statement to regularize the position of the students as regards insurance and forwarded to the Students' Office.

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

There are no conditions that could prejudice enrollment in subsequent years.

**Art. 19 – Certifications**

Certification is not recognised.



# UNIVERSITÀ DEGLI STUDI DI PAVIA

DIPARTIMENTO DI BIOLOGIA E BIOTECNOLOGIE  
**CORSO DI LAUREA MAGISTRALE IN MOLECULAR BIOLOGY AND GENETICS**  
 (Classe LM-6)

## PIANO DI STUDI COORTE 2018-19

### I YEAR (59 C.F.U.)

INSEGNAMENTO	CFU	SEMESTRE	SSD	TAF
Methods in Biochemistry	9	I	BIO/10	Caratterizzante
Advanced Molecular Biology	6	I	BIO/11	Caratterizzante
Bioinformatics	6	I	ING-INF/06	Affini/Integrative
Structural Biology and Pharmacology	6	II	BIO/11	Caratterizzante
Microbial Genetics	6	II	BIO/18	Caratterizzante
Human Molecular Genetics	6	II	BIO/18	Caratterizzante
Molecular Pharmacology	6	II	BIO/14	Caratterizzante
Internship for experimental thesis	14	II		Lingua/Prova finale

### II YEAR (61 C.F.U.)

INSEGNAMENTO	CFU	SEMESTRE	SSD	TAF
Cellular Biochemistry	6	I	BIO/10	Caratterizzante
Developmental Biology	6	I	BIO/06	Caratterizzante
Plant Molecular Biology and Biotechnology	6	II	BIO/04	Affini/Integrative
Molecular Microbiology	6	II	BIO/19	Caratterizzante
Informatic skills	1	II		Altro
Free activities*	12	II		A scelta dello studente
Internship for experimental thesis b	24	II		Lingua/Prova finale

**\*Two courses (6+6 credits) to be chosen among the following four  
(or one course + \*\*6 laboratory credits):**

**\*Courses suggested as free activities**

INSEGNAMENTO	CFU	SEMESTRE	SSD	TAF
Advanced Microscopy	6	I	BIO/06	A scelta dello studente
Immunology	6	II	MED/04	A scelta dello studente
Molecular Entomology	6	I	BIO/05	A scelta dello studente
Molecular Genetics	6	I	BIO/18	A scelta dello studente

**\*\*Laboratories suggested as free activities**

INSEGNAMENTO	CFU	SEMESTRE	SSD	TAF
Laboratory of Plant Pathology	6	II	AGR/12	A scelta dello studente
Laboratory of Botany	6	II	BIO/02	A scelta dello studente
Laboratory of Plant Physiology	6	II	BIO/04	A scelta dello studente
Laboratory of Zoology	6	II	BIO/05	A scelta dello studente
Laboratory of Comparative Anatomy and Cytology	6	II	BIO/06	A scelta dello studente
Laboratory of Ecology	6	II	BIO/07	A scelta dello studente
Laboratory of Physiology	6	II	BIO/09	A scelta dello studente
Laboratory of Biochemistry	6	II	BIO/10	A scelta dello studente
Laboratory of Molecular Biology	6	II	BIO/11	A scelta dello studente
Laboratory of Pharmacology	6	II	BIO/14	A scelta dello studente
Laboratory of Genetics	6	II	BIO/18	A scelta dello studente

Laboratory of Microbiology	6	II	BIO/19	A scelta dello studente
Laboratory of General Pathology	6	II	MED/04	A scelta dello studente
Laboratory of Immunology	6	II	MED/04	A scelta dello studente
Laboratory of Parasitology	6	II	VET/06	A scelta dello studente