Training Plan Sheet

This sheet is designed as a practical tool to guide doctoral students through the training pathway required by their program. It provides an overview of mandatory and elective educational activities, the procedures for earning academic credits, the timelines to be respected, and opportunities for scientific and interdisciplinary enrichment.

The goal is to offer a clear and accessible roadmap that supports doctoral candidates in planning their academic journey, fostering a solid, coherent education aligned with the required academic and professional standards.

STUDY PLAN

PHD PROGRAM IN MOLECULAR MEDICINE

Educational Activities 15 ECTS

- Basic Molecular Medicine (Year 1) — 5 ECTS (20 hours)
- Preclinical Molecular Medicine (Year 2) — 5 ECTS (20 hours)
- Clinical Molecular Medicine (Year 3) — 5 ECTS (20 hours)

Research Activities 160 ECTS

- Year 1 — 55 ECTS
- Year 2 — 55 ECTS
- Year 3 — 50 ECTS

Final Examination — 5 ECTS

Total: — **180 ECTS**

EDUCATIONAL ACTIVITIES

First Year Courses

Basic Molecular Medicine – 5 ECTS (20 hours)

Elective Modules in Disciplinary Education (D) and Interdisciplinary, Multidisciplinary, and Transdisciplinary Training (IMT)Insegnamenti del primo anno

Module Description	Hours	ECTS	Type
Advanced Biomedical Research in Cardiac Pathophysiology	4	1	D
Animal Experimentation and Transgenic Models in Biomedical Research: Legal, Technical-Scientific, and Ethical Issues	4	1	D
Advanced Biomedical Research in Clinical Biochemistry and Molecular Biology	4	1	D
Advanced Biomedical Research in Pharmacology	4	1	D
Advanced Biomedical Research in Human Anatomy	4	1	D

Advanced Biomedical Research in Motor and Sports Sciences	4	1	D
Advanced Biomedical Research in Histology	4	1	D
Advanced Biomedical Research in Biochemistry	4	1	D
Other Educational Activities (seminars, laboratory and research activities, interdisciplinary, multidisciplinary, and transdisciplinary training)	10	1.5	IMT

Second Year Courses

Preclinical Molecular Medicine – 5 ECTS (20 hours)

Elective Modules in Disciplinary Education (D) and Interdisciplinary, Multidisciplinary, and Transdisciplinary Training (IMT)Insegnamenti del secondo anno

Module Description	Hours	ECTS	Type
Advanced Biomedical Research in General and Clinical Pathology	4	1	D
Advanced Biomedical Research in Medical Oncology	4	1	D
Advanced Biomedical Research in Microbiology and Clinical Microbiology	4	1	D
Advanced Biomedical Research in Pathological Anatomy	4	1	D
Advanced Biomedical Research in Clinical Psychology	4	1	D
Advanced Biomedical Research in Forensic Medicine and Legal Sciences	4	1	D
Advanced Biomedical Research in General and Clinical Pathology	4	1	D
Other Educational Activities (seminars, laboratory and research activities, interdisciplinary, multidisciplinary, and transdisciplinary training)	10	1.5	IMT

Third Year Courses

Clinical Molecular Medicine – 5 ECTS (20 hours)

Elective Modules in Disciplinary Education (D) and Interdisciplinary, Multidisciplinary, and Transdisciplinary Training (IMT)Insegnamenti del terzo anno

Module Description	Hours	ECTS	Type
Ricerca biomedica avanzata in Malattie dell'apparato Cardiovascolare	4	1	D
Ricerca biomedica avanzata in Igiene generale e applicata	4	1	D
Ricerca biomedica avanzata in Anestesiologia	4	1	D
Ricerca biomedica avanzata in Medicina fisica e riabilitativa	4	1	D
Ricerca biomedica avanzata in Chirurgia maxillofacciale	4	1	D
Ricerca Biomedica Avanzata in Odontoiatria	4	1	D
Altre attività didattiche (seminari, attività di laboratorio e di ricerca, formazione interdisciplinare, multidisciplinare e transdisciplinare)	10	1.5	IMT

List of Educational Activities

(Seminars, laboratory and research activities, interdisciplinary, multidisciplinary, and transdisciplinary training)

- **Course in "Statistics"**, Prof. A. Pelosi. Multidisciplinary course within the PhD Program in Neuroscience, Doctoral School of Medicine and Surgery and Veterinary Medicine (2.5 ECTS).
- **Cross-disciplinary Course: English for Academic Purposes**. Instructor (Language Expert – CEL): Dr. Christen Kisch (36 hours).
- **Course in "European Project Design"**. Interdisciplinary teaching and soft skills. Course organized by the University for doctoral students enrolled in training programs.
- **Ethics and Integrity in Research**. Dr. Sally Louise Williams (sallylouise.williams@unipr.it) (12 hours).
- **"Publishing in the Academic Environment"**. Organized by the Research Monitoring Unit of the University of Parma and the Library Unit of the Department of Medicine and Surgery. Informative session addressed to PhD students of the Doctoral School in Medicine and Surgery and Veterinary Medicine.
- **Analysis of Posture and Gait for the Identification of Specific Motor Patterns**, taught by Dr. Valentina Presta, Department of Medicine and Surgery – University of Parma (6 hours).
- **Laboratory Safety: Technical Procedures and Operational Safety Instructions**. Postgraduate training course addressed to Research Fellows, Scholarship Holders, PhD students, Master's students, and participants in Advanced Training Programs under other contractual arrangements. For courses delivered in person or via webinar, participants will be notified by e-mail from the Training Service for Occupational Safety and Prevention (formazione.sicurezza@unipr.it).

Educational Activities

The doctoral program includes three mandatory multidisciplinary courses of at least 20 hours each, composed of teaching modules in disciplinary, interdisciplinary, multidisciplinary, and transdisciplinary education, chosen by the student. For each course, the teaching modules that compose it are indicated: the number of hours (at least 4) is published in the lesson calendar available on the PhD website. Classes are delivered in person. Synchronous remote connection (via the TEAMS platform) is guaranteed, upon student request, for those who are temporarily abroad or in another laboratory outside Parma for study and research purposes.

Attendance at classes is mandatory. The instructor responsible for the teaching module provides certification of attendance. Students can access supporting materials for the lessons deposited on the ELLY platform or sent directly to their official university e-mail address by the instructor.

“Other educational activities” refers to participation in seminars, laboratory and research activities, and interdisciplinary, multidisciplinary, and transdisciplinary training proposed by the University of Parma, the Department, the Doctoral School in Medicine and Surgery and Veterinary Medicine, and the PhD Program itself, up to a maximum of 10 per year. Specialized postgraduate training activities at non-university research institutes may also be considered valid, provided they are previously agreed upon with the Supervisor.

The student must complete no fewer than 20 hours of certified educational activities per year, certified by the instructor responsible for the teaching module. The Supervisor is responsible for verifying the certifications.

For each course, a proficiency examination is required. Learning assessment is conducted through the production of a written paper on the topics and themes covered in class (not exceeding 1000 words), which will be discussed during the examination. The examination verifies knowledge, skills, and the ability to transfer knowledge and competencies regarding the topics addressed in class. The examination is held in person in September. The date and venue of the examination are published on the PhD website (at least two examination dates are scheduled). The examination does not involve a grade but rather a judgment of suitability.

Research Activities

The doctoral program requires the performance of study, design, implementation, and discussion of a structured research project, possibly covering multiple topics. Verification of research activity is carried out through the drafting of a written paper (Scientific Report), the compilation of the Activity Report, and a Seminar for in-person discussion. The Scientific Report and the Activity Report, countersigned by the Supervisor, must be prepared and submitted to the Coordinator of the PhD Program by October 15 of the current year. The seminar is scheduled by January of the year following the reporting year.

At the end of the three years, the doctoral candidate deposits on ESSE3 the doctoral thesis, the final Scientific Report on the activities carried out, and the Activity Report. The doctoral candidate defends in an oral examination the arguments of the doctoral thesis and the entire three-year training pathway. The Examination Committee issues a written judgment on the quality and originality of the research presented in the thesis, on the quality of the description and relevance of the methodologies, and on the quality of the presentation and discussion of the results. During the oral examination, the doctoral candidate is evaluated on the level of knowledge acquired. The Examination Committee expresses a qualitative judgment according to the following merit scale: Exceptional, Excellent, Very Good, Good, Fairly Good, Positive, Sufficient.

Calculation of ECTS Credits for Annual Research Activity

In addition to attending classes, the student must carry out research activities in order to reach the total of **60 ECTS credits required for each academic year**. In the first and second year,

research activity must account for at least **55 ECTS credits**, while in the third year it must account for **50 ECTS credits**.

Research and study activities abroad, subject to prior authorization by the Doctoral Board, correspond to **5 ECTS credits per month** (with a tolerance of one week). Attendance at laboratories or university facilities, including those external to the University of Parma, also corresponds to **5 ECTS credits per month**.

Research outputs are recognized as ECTS credits for research activity as follows:

- An article published in a JCR-indexed scientific journal: **5 ECTS**
- A contribution in academic books: **2 ECTS**
- Participation in conferences/meetings as an attendee: **0.1 ECTS**
- Contribution/poster presentation at a conference: **0.5 ECTS**
- Participation in conferences with oral communication: **1 ECTS**
- Filing or realization of a patent: **5 ECTS**

Supplementary teaching and third mission activities/tutoring are recognized at the rate of **1 ECTS for every 4 hours**.

For any further information, reference should be made to the **Doctoral Program Regulations**.