Other educational activities (seminars, laboratory and research activities, interdisciplinary, multidisciplinary, and transdisciplinary training)

n.	Type of activity.	Description of the activity (and the access procedures to the infrastructures for national PhD programmes).
1.	Seminars.	Each year, a two-day seminar cycle is organised, during which first, second, and third-year PhD students in Biotechnology and Biosciences present the results of their research. The seminar includes a 10-minute PowerPoint presentation for those who have completed the first year, a 20-minute presentation for those who have completed the second year, and a 30-minute presentation for those who have completed the third year. The seminars are followed by a discussion and exchange with members of the Academic Board, in the form of questions and requests for further details regarding the presented data, potential developments, and implications within the Biotechnology sector..
2.	Laboratory activities	PhD students will dedicate themselves full-time to developing a research project within one of the thematic areas of the PhD Programme in Biotechnology and Biosciences: (i) environmental biotechnology; (ii) genetic and evolutionary biotechnology; (iii) molecular biotechnology. As part of their project, they will acquire methodological skills (specific laboratory techniques) as well as competencies aimed at the critical and proactive analysis of research topics, thereby achieving scientific and managerial independence. This will be further supported by the numerous international scientific collaborations they will be involved in, enhanced by interactions with the universities within the EU GREEN Alliance network..
3.	Language enhancement	Interdisciplinary training activities aimed at acquiring language skills (English language) for scientific writing, as well as for the discussion of research findings at international conferences/meetings. The University of Parma offers, in each academic year, elective training activities with cross-disciplinary and multidisciplinary relevance (https://www.unipr.it/node/30327), which can be selected by all enrolled students across the University's degree programmes.
4.	Fundamental principles of ethics, gender equality, and integrity	The University of Parma offers, in each academic year, elective training activities with cross-disciplinary and multidisciplinary relevance (https://www.unipr.it/node/30327), which can be selected by all PhD students enrolled in the University's degree programmes. Additionally, the course 'Preclinical Research: From Science to Legislation' is recommended. Instructor: Prof. Ilaria Zanotti. This course will provide an overview of the basic knowledge required to conduct preclinical studies, with a particular emphasis on the use of animals in scientific procedures. Specifically, the following topics will be covered: the Code for Research Integrity; the 3Rs principles; a priori statistical analysis for sample size calculation; alternative methods to replace animal models; European and Italian laws regarding animal experimentation; and guidelines for applying for authorization to carry out experiments involving animals.
5.	Seminars.	A series of seminars are scheduled annually on a monthly basis, delivered by experts both national and international, covering various topics related to environmental biotechnology, genetic and evolutionary biotechnology, and molecular biotechnology. The seminars typically last around two hours and are followed by a discussion (questions/remarks from the audience). Additionally, PhD students are provided with information regarding all relevant seminars of potential interest at universities and external institutions. Opportunities for seminars (webinars) will also be created by the EU GREEN Alliance network, with contributions from the eight partner universities.
6.	Valorisation and dissemination of results, intellectual property, and open access to research data and products	The University of Parma offers, each academic year, elective training activities with a transversal and multidisciplinary scope (https://www.unipr.it/node/30327), which can be selected by all PhD students enrolled in the university's study programmes. Furthermore,, it is recommended.: "Patent (IP rights) vs scientific publication (free divulgation): analogies, differences, opportunities and risks". Docente Prof. Livia Villa. Aims: Offer an overview of IP rights, in order to understand their value, potential, synergies, but also their requirements and legal implications, as well as the different purposes, especially in comparison with free scientific divulgation. Topics: The meaning of "IP rights". What is a patent and what is a scientific publication: contents and procedures. Who are the subjects responsible for their evaluation. What purpose and what advantages are achieved. What information can be found therein and when this information becomes public. What rights are acquired and who owns them. When regulatory world and IP world meet each other.
7.	Valorisation and dissemination of results, intellectual property, and open access to research data and products	The University of Parma offers, each academic year, elective training activities with a transversal and multidisciplinary scope (https://www.unipr.it/node/30327), which can be selected by all PhD students enrolled in the university's study programmes. Furthermore, it is recommended... "Introduction to Scientific Communication" Docente: Prof. Ruggero Bettini, Alessio Lodola The course provides a systematic overview of the principles of the various modes and forms of scientific communication including scientific papers, technical reports, presentations, as well as writing of research proposal. The course emphasizes basic skills for critical evaluation of scientific communications providing opportunities for practicing these principles.

8.	IT enhancement	The University of Parma offers, each academic year, elective training activities with a transversal and multidisciplinary scope (https://www.unipr.it/node/30327), which may be selected by all PhD students enrolled in the university's study programmes. Furthermore, it is advised... "Practical biostatistics" Docente:	
		Prof. Massiliano Tognolini. Practical lessons on biomedical data analysis and interpretation. The course will include exercises with Excel and Prism - GraphPad. The following topics are expected to be addressed: Descriptive statistics: distributions, measures of central tendency, measures of dispersion, skewness. Data representation: bar plot, whisker plot, scatter plot, low-to-high. Inferential statistics (population and sample; comparing a sample with a population, a sample with a sample: t-test, p significance, type I and type II error; comparing 2 or more groups: One-way ANOVA, Two-way ANOVA; simple regression and correlation) Non parametric inferential statistics: Chi squared test. Good statistical practices in experimental design and their reporting	
9.	Management of research and knowledge of European and international research systems	The University of Parma offers, each academic year, elective training activities with a transversal and multidisciplinary scope (https://www.unipr.it/node/30327), which can be selected by all PhD students enrolled in the university's study programmes. Moreover, it is recommended... "Research Integrity and Open Science". Docente Prof. Silvia Pescina. The course deals with Research Integrity and Open Science, two essential and interdisciplinary topics for the training of PhD candidates. In the first part, concerning the Research Integrity, the fundamentals of research ethics, as well as example of good research practices and infractions of research integrity will be provided. Once prepared the ground, being communication and dissemination two crucial aspect in the research activity, strictly related to ethics, the second part will address the Open Science. Therefore, the concepts of open source, open data, open access publications will be presented.	
10.	Seminars	Within the framework of the EU GREEN Alliance network, Summer Schools and Blended Intensive Programmes (BIP) are offered annually, organised by two or more locations within the network. PhD students will be given the opportunity to enrol in and participate in these initiatives.	