

Degree programme	Type	Course
Advanced Genetics	OB	0

Contact lecturer

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Teaching staff

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

Students must meet the admission requirements for the Master's Degree in Advanced Genetics, including:

- A B1 level of English, in accordance with the Common European Framework of Reference for Languages.
- A Bachelor's degree (or an equivalent qualification) in Biosciences, Medicine, Pharmacy, Veterinary Medicine, or a closely related discipline.

Objectives

- To broaden students' understanding of current applications and emerging challenges in genetics beyond the topics covered in the other modules of the Master's programme.
- To expose students to emerging research areas and their applications across different fields of genetics and the life sciences.
- To develop students' ability to critically analyse scientific advances presented by experts from different disciplines and integrate them with the knowledge acquired throughout the Master's programme.
- To foster interest in research and innovation through direct interaction with leading researchers in the field.

Learning outcomes

1. Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of in a research context.
2. Write critical summaries about the taught seminars.
3. Students should be capable of integrating knowledge and facing the complexity of making judgements

using information that may be incomplete or limited, including reflections on the social and ethical responsibilities linked to that knowledge and those judgements.

4. Preparation of work related to the module content.
5. Use genetic analysis in the interpretation of those theoretical concepts and the valuation of the experimental results.
6. Analyse and compare current methodologies in the context of applicability to genetics.
7. Apply bio computing information in complete genome association studies.
8. Use knowledge of changes in DNA to explain mechanisms such as evolution and genetic make-up.
9. Understand the genetic tools used in gene therapy.
10. Carry out individual projects.
11. Demonstrate responsibility in management of information and knowledge.
12. Design and apply scientific methodology in resolving problems.
13. Use scientific terminology to argue the results of the research and show how to communicate in spoken and written English in an international setting.
14. Analyse the research results to obtain new products or processes valuing their industrial and commercial viability for transfer to society.
15. Develop critical reasoning in the area of study and in relation to the scientific and business environments.

Contents

The course provides a broad overview of current applications of genetics through lectures delivered by leading specialists from different areas of research, innovation, and knowledge transfer.

Topics may include, but are not limited to, biomedicine, agrogenomics, microbiology, gene therapy, toxicology, genomics, metagenomics, and other emerging areas related to genetics. As the lecture programme is updated each academic year, the names of the invited speakers and the lecture titles will be announced through the Virtual Campus.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Self-study	85	3.4	
Lectures	38	1.52	
Portfolio	17	0.68	

The course is structured around a programme of lectures delivered by internationally recognized specialists from different fields of genetics and the life sciences, including biomedicine, agrogenomics, microbiology, gene therapy, toxicology, genomics, and metagenomics, among others.

These lectures provide students with an overview of current applications of genetics in research, innovation, and knowledge transfer, while familiarizing them with major scientific and technological challenges in the field. The list of invited speakers and lecture titles will be announced through the Virtual Campus.

Attendance at all lectures is mandatory.

As part of the learning activities, students will compile an individual portfolio containing a summary and critical reflection on each lecture. Portfolio entries will be submitted periodically through the Virtual Campus and will constitute the evidence of learning for the course. The portfolio should demonstrate not only an understanding of the topics presented, but also the ability to analyse, synthesize, integrate knowledge, and critically reflect on the subjects discussed.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Attendance to lectures	100%	1	0.04	1, 3, 13, 15
Portfolio	100%	9	0.36	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Continuous assessment

Assessment is based on the continuous monitoring of the learning activities carried out throughout the course.

Attendance at all lectures is mandatory and constitutes an essential requirement for passing the course.

The individual portfolio will account for 100% of the final course grade.

Throughout the course, students are required to submit, via the Virtual Campus, a summary/critical reflection for each lecture. These submissions will together constitute the course portfolio.

The portfolio will be assessed according to the following criteria:

- understanding of the topics presented during the lectures;
- ability to analyse, synthesize, and critically reflect on the content;
- integration of the knowledge acquired with other concepts covered in the Master's programme and, where appropriate, with the relevant scientific literature;
- quality of written communication and appropriate use of scientific language;
- ability to identify the relevance and potential applications of the topics discussed.

A minimum final grade of 5 out of 10 is required to pass the course.

To be eligible for the resit assessment, students must have completed assessment activities representing at least two-thirds (67%) of the total course grade. Students whose completed assessment activities account for less than 67% of the final grade will receive the status "Not Assessed."

Students who are unable to submit one or more assessment activities for a duly justified reason and provide the appropriate supporting documentation must notify the teaching staff. In such cases, the teaching staff will determine the most appropriate alternative assessment procedure.

Single assessment

Students opting for the single assessment system must submit a complete portfolio containing the summaries/critical reflections corresponding to all lectures delivered throughout the course.

The portfolio will account for 100% of the final course grade and will be assessed using the same criteria as those applied in the continuous assessment system. It must be submitted on the date established for the single assessment according to the academic calendar.

The same resit regulations that apply to continuous assessment will also apply to the single assessment.

Use of Artificial Intelligence

The use of Artificial Intelligence (AI) technologies is permitted in this course only as a support tool, for example for literature or information searches, language editing, or translation.

Students must clearly acknowledge any use of AI tools by identifying the sections of the work that have been assisted or generated using AI, specifying the tools used, and providing a brief critical reflection on how these tools contributed to the development of the work.

Failure to disclose the use of AI will be considered a breach of academic integrity and may result in a partial or total loss of marks for the assessment, as well as more severe disciplinary sanctions where appropriate.

Any irregularity committed during an assessment activity (including academic fraud, plagiarism, or the improper use of AI, unless such use is expressly authorized in the course syllabus) that may lead to a significant alteration of the assessment outcome will result in a grade of 0 for that assessment activity. If the course syllabus establishes that obtaining a minimum grade in that assessment activity is a compulsory requirement for passing the course, or if multiple irregularities occur in the assessment activities of the same course, the final grade for the course will be 0. In addition, disciplinary proceedings may be initiated against any student who commits any of these irregularities.

Bibliography

As the invited speakers and the content of the lectures may vary from one academic year to another, the specific bibliography for each session will be provided progressively through the Virtual Campus and/or during the corresponding lecture. Where appropriate, the recommended reading will include research articles, review papers, and other relevant resources related to the topic covered.

Software

Not required.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TEm) Theory (master)	1	English	first semester	morning-mixed