

Degree	Type	Year	Semester
4313802 Advanced Genetics	OB	0	2

Contact

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Use of languages

Principal working language: english (eng)

Prerequisites

There are no special pre-requisites.

Objectives and Contextualisation

To be able to reach an autonomous ability to develop a methodological approach to solve specific question in Genetics.

Skills

- Analyse the research results to obtain new products or processes valuing their industrial and commercial viability for transfer to society.
- Conceive, design, carry out and synthesise scientific projects in the area of genetics, both theoretical and applied.
- Demonstrate a mastery of genetic analysis as a transversal tool applicable to any field of genetics.
- Demonstrate responsibility in the direction of groups and/or projects in multidisciplinary teams.
- Design and apply scientific methodology in resolving problems.
- Develop critical reasoning in the area of study and in relation to the scientific and business environments.
- Identify and propose scientific solution for problems related to genetic research at both molecular and organism levels and demonstrate an understanding of the complexity of living beings.
- Possess and understand knowledge that provides a basis or opportunity for originality in the development and/or application of ideas, often in a research context
- Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
- Students should know how to apply the knowledge they acquire and be capable of solving problems in new or little-known areas within broader contexts (or multidisciplinary contexts) related to their area of study
- Use and manage bibliographical information and other resources related to genetics and related fields.
- Use scientific terminology to argue the results of the research and show how to communicate in spoken and written English in an international setting.
- Work individually and in a team in a multidisciplinary context

Learning outcomes

1. Analyse the research results to obtain new products or processes valuing their industrial and commercial viability for transfer to society.

2. Apply bibliographical information on genetic evolution to understand evolutive processes
3. Demonstrate an understanding of the theoretical bases of different technical applications commonly used in different areas of genetic application.
4. Demonstrate responsibility in the direction of groups and/or projects in multidisciplinary teams.
5. Interpret the results obtained in experiments designed to take adequate decisions and be able to propose pertinent solution for questions posed in different areas of genetics.
6. Make proposals in group meetings about improvements in experimental for the project being carried out.
7. Preparation of work related to the module content
8. Propose improvement in procedures for experimental protocols
9. Take an active part in group meetings
10. Understand the importance of data obtained in genetic analysis in the methodological environment used.
11. Use a knowledge of genetics to solve problems posed
12. Use scientific terminology to argue the results of the research and show how to communicate in spoken and written English in an international setting.
13. Write a report that considers the use of the methodology used in the module to resolve a specific problem
14. Write up protocols for experiments

Content

The content of this module will suppose to stay in a research laboratory to learn and use methodological approaches to answer specific questions.

Methodology

The main finality of this module is developing an experimental task in a research group. Aspects such as the ability to develop autonomous work , look for references to improve the theoretical aspects of the research activity and establish positive synergies with the members of the group are aspects to be developed in the module.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Supervised			
Laboratory work	300	12	1, 3, 5, 7, 9, 10, 11, 12, 13

Evaluation

The assessment of the laboratory practice will be done by the supervisor of the laboratory. The ability to develop a correct activity in the lab will constitute the main source of information to be considered for the evaluation of the study. Formal aspects (as punctuality and assistance); Knowledge and skills (as conceptual and practical knowledge, verbal communication, fluency in English, computer skills, evaluation of the results, and organization) and attitude (as ability to integrate in a research team, meet deadlines and assimilate new concepts) will be also evaluated.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
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Supervision of the task	100	75	3	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
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Bibliography

Each student will need specific bibliography according to their research. The supervisor of the lab will provide the students with current references to understand the state of the art of the topic to be developed.