Professional Practice

Code: 42400
ECTS Credits: 15

2024/2025

Degree	Type	Year
4313473 Bioinformatics	OB	0

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

To carry out this module it is necessary to have passed previously both compulsory modules (Programming in Bioinformatics and Core Bioinformatics) and one of the optative modules.

It is recommended you have a Level B2 of English or equivalent.

Objectives and Contextualisation

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The main objective of these practices is to promote the students' interaction with the research and professional environments around them.

Competences

- Apply research results to obtain new good and services valuating their industrial and commercial viability to transfer them to society.
- Assess gender inequalities when acting in this field of knowledge.
- Conceive, design and carry out scientific, technical or industrial projects in biocomputing and be able to interpret and extract knowledge from them.
- Design and apply scientific methodology in resolving problems.
- Identify the biocomputing needs of research centres and companies in the biotechnology and biomedicine sectors.
- 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.
- Propose biocomputing solutions for problems deriving from omic research.
- Propose innovative and creative solutions in the field of study
- Students should be able to integrate knowledge and face the complexity of making judgements based on information that may be incomplete or limited and includes reflections on the social and ethical responsibilities associated with the application of their knowledge and judgements
- Students should know how to apply the knowledge they have acquired and their capacity for problem solving in new or little known fields within wider (or multidisciplinary) contexts related to the area of study
- Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
- Use and manage bibliographical information and computer resources in the area of study
- Work individually and as part of a team in an international and multidisciplinary context.

Learning Outcomes

1. Analyze bioinformatics cases and propose innovative solutions.
2. Apply knowledge and skills acquired in genomics, proteomics and computation to potential technological research or business projects based on biocomputing.
3. Apply research results to obtain new good and services valuating their industrial and commercial viability to transfer them to society.
4. Assess gender inequalities when acting in this field of knowledge.
5. Design and apply scientific methodology in resolving problems.
6. 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.
7. Propose business projects in the area of biocomputing from an integrated view of R&D processes.
8. Propose innovative and creative solutions in the field of study
9. Select critically and apply in each case, appropriate bioinformatics tools to the problem.
10. Students should be able to integrate knowledge and face the complexity of making judgements based on information that may be incomplete or limited and includes reflections on the social and ethical responsibilities associated with the application of their knowledge and judgements
11. Students should know how to apply the knowledge they have acquired and their capacity for problem solving in new or little known fields within wider (or multidisciplinary) contexts related to the area of study
12. Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
13. Use and manage bibliographical information and computer resources in the area of study
14. Use clear, concise communication to assess and guide the interpretation of data for resolving problems in the biomedical field.
15. Work individually and as part of a team in an international and multidisciplinary context.

Content

During the internship, the student will be closely monitored by the research tutor in the company/research center where he/she is receiving the practical training.

In this module, the student will have the opportunity to collaborate in multidisciplinary research projects, applying all the knowledge obtained throughout the course, and gaining professional experience.

In the professional practice module there are also planned some visits to research centres and institutions working in the field of bioinformatics. The aim of these visits is to show to the students the research and professional environments around bioinformatics and some of the job positions which they will be able to apply for once they have finished the MSc in Bioinformatics.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Supervised			
Practical training	375	15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

The Professional Practice is a mandatory module that involves 375 hours of student work within a company, a research group or a research department of the UAB. The student may choose to do the internship in a research center, if he/she is planning in the future to engage in basic research, or to make stays in private companies or hospitals to develop the career in applied fields.

During the first semester, the module coordinator will give a list with offers from companies and institutions for the MSc in Bioinformatics students. The student should notify the coordinator his/her preferences in the offered list and she will ensure proper communication between the student and the responsible person in the company or institution.

If the student pretends to stay in a company or institution not from the provided list, the student will need to deliver a description of the project and the institution that will be evaluated by a comission.

It is the student's responsibility to find the company or research group where he/she will do the professional practice. Once found, he/she must communicate it to the module coordinator and fill the required form to elaborate an agreement between the UAB and the institution.

The module coordinator must assign an academic tutor who ensures the correct development of the student's internship. Once the form has been completed and duly signed, the student will hand in one copy to the Academic Management office of the Faculty of Biosciences.

The student must deliver the required paperwork to the Academic Management office at least 1 month before the beginning of the internship. After that, the Academic Management staff will get in touch with both the student and the responsible person at the company/institution to have the final agreement signed.

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

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Student's practice report	30%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
Tutor's follow-up and evaluation report	70%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

The Professional Practice Module will be evaluated using a follow-up and evaluation report, written by the project supervisor at the institution/company (70%) and with the grading of the student's practice report (30%).

The student must ensure that the module coordinator receives both documents, practice report and tutor's evaluation report, in the following dates. They can be sent by email, through the portfolio and/or delivered in person.

- Deadine July 2025, exact day will be confirm during the academic year.

Bibliography

The student will be responsible for the research and consulting literature required to perform their practice. He/she may be helped by the supervisor.

Recommended lectures

- Nussbeck, S.Y., Weil, P., Menzel, J., Marzec, B., Lorberg, K. & Schwappach, B. 2014 The laboratory notebook in the 21st century: The electronic laboratory notebook would enhance good scientific practice and increase research productivity. EMBO reports 2014 15: 631-4

- Bosch, X. 2010 Safeguarding good scientific practice in Europe. EMBO reports 2010 11: 252-7

Software

Software will depend on the practices performed by the student.

Language list

Information on the teaching languages can be checked on the CONTENTS section of the guide.