Course guide
2703131 - IP - Innovation Project

Last modified: 30/01/2026

Unit in charge:	Barcelona School of Informatics
Teaching unit:	230 - ETSETB - Barcelona School of Telecommunications Engineering.

Degree: BACHELOR'S DEGREE IN BIOINFORMATICS (Syllabus 2024). (Optional subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** English

LECTURER

Coordinating lecturer:

Others:

PRIOR SKILLS

LEARNING RESULTS

Knowledges:
K7. Analyse sources of valid and reliable scientific information to determine the state of the art of a bioinformatics problem and how to tackle it.

Skills:
S10. Apply acquired knowledge and bioinformatics problem-solving skills in new or unfamiliar environments in broader (or multidisciplinary) contexts related to bioinformatics and computational biology.
S5. Communicate information, ideas, problems and solutions from bioinformatics and computational biology to a general audience.
S6. Identify and interpret relevant data within the field of study in order to make judgements that include social, scientific and ethical considerations.
S8. Make and defend reasoned decisions when solving problems in biology and, in appropriate fields, the health sciences, computer science and experimental sciences.

Competences:
C1. Apply knowledge in a professional and integrated manner in one's work or vocation and behave in a manner consistent with ethical and responsible professional practice, taking into account the human and fundamental rights of individuals and respecting the principles of universal accessibility.
C2. Recognise the complexity of the economic and social phenomena typical of a welfare society and relate welfare to globalisation, sustainability and climate change in order to use techniques, technology and principles of economics and sustainability in a balanced and compatible way.
C3. Communicate orally and in writing with others in English about learning outcomes, thought processes and decision making.
C4. Work as part of a multidisciplinary team, whether as a team member or in a leadership role, to contribute to the development of projects (including business and research projects) with pragmatism, a sense of responsibility and ethical principles, undertaking commitments with due regard to the resources available.
C5. Unify the acquisition, structuring, analysis and visualisation of data and information in the field of specialisation and critically assess the results obtained.
C6. Identify and overcome gaps in one's knowledge by thinking critically and choosing the best approach to extending one's knowledge.
C8. Develop, design and manage bioinformatics projects.

TEACHING METHODOLOGY

TEACHING METHODOLOGIES
* Expository class of theoretical and practical contents
* Participatory class, based on the resolution of practical cases or exercises or on the discussion of previously assigned readings
* Group work with the presence of the teacher
* Group / cooperative work without the presence of the teacher
* Presentation of work by students

LEARNING OBJECTIVES OF THE SUBJECT

1.Have the ability to conceive, design, develop and implement AI-based systems capable of extracting information from data and signals, processing them and generating solutions (responses, actions, decisions, diagnoses, predictions) applicable to the problem environment, whether physical , virtual or a combination of both.
2.Being able to select the most appropriate AI techniques, methods and models for each aspect of the problem to be solved, and integrate them into a single, coherent and effective system.
3.Being able to manage a complex project, define its scope, carry out temporal planning (of processes and activities) and economic planning (of human, material and immaterial resources), prioritize and re-plan when necessary (based on criteria of reduction of the risk and increase in the value contributed by the result).
4.Being able to adequately present the results of the project, justifying the decisions made and the added value provided by the system.

STUDY LOAD

Type	Hours	Percentage
Hours small group	30,0	20.00
Hours large group	30,0	20.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

Project managament

Description:
After the first phase, students do an exercise to create a project management environment.

Lean innovation and design thinking

Description:
In the second phase, problems that come from companies are heard and the students make a proposal.

Project development

Description:
In the third phase, after selecting proposals, we work towards a minimum viable product.

ACTIVITIES

Project management

Full-or-part-time: 50h
Theory classes: 10h
Practical classes: 10h
Self study: 30h

Lean innovation and design thinking

Full-or-part-time: 50h
Theory classes: 10h
Practical classes: 10h
Self study: 30h

Project development

Full-or-part-time: 50h
Theory classes: 10h
Practical classes: 10h
Self study: 30h

GRADING SYSTEM

Long-answer oral or written tests (%) 0.0-20.0
Multiple choice tests (%) 0.0-15.0
Oral presentations (%) 20.0-40.0
Written assignments on topics proposed in advance(%) 0.0-30.0
Tests performed (%) 10.0-30.0

BIBLIOGRAPHY

Basic:
- Blank, Steve; Dorf, Bob. The Startup Owner's Manual The Step-by-Step Guide for Building a Great Company. John Wiley & Sons, Inc., 2020. ISBN 9781119690689.