COURSE DATA

DATA SUBJECT

Code: 33159
Name: Degree final project in biochemistry and biomedical sciences
Cycle: Undergraduate Studies
ECTS Credits: 12
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
1109 - Degree in Biochemistry and Biomedical Sciences	Facultat de Ciències Biològiques	4	Indefinite (Individuals)

SUBJECT-MATTER

Degree	Subject-matter	Character
1109 - Degree in Biochemistry and Biomedical Sciences	Degree Final Project	FINAL DEGREE PROJECT

COORDINATION

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SUMMARY

The TFG is the development and presentation of an original work made ¿¿individually by the student under the supervision of a tutor. The TFG is equivalent to 12 ECTS credits and will consist of an original project of one of the types defined in "Modalities of TFG" (see thematic units for the description of the three possible modalities) which be submitted as a written report and defended in oral presentation. This work aims at applying the knowledge and experience acquired during the training stage of Biochemistry and Biomedical Sciences to solving problems in the field of the degree, employing creativity and all academic and personal skills acquired during the studies. The TFG is a unique experience, as it is aimed at the integration of all the knowledge gained during the degree. Competencies to be acquired with the TFG are not unique to this activity, but in the TFG is where the student can demonstrate the consolidation of all of them in a work that tests, in an integrated manner, knowledge and skills acquired during the degree as well as its projection into the professional practice.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

To have completed at least 168 credits and be enrolled in all subjects that are missing to complete the degree.

COMPETENCES / LEARNING OUTCOMES

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Apreciación del rigor, el trabajo metódico, y la solidez de los resultados.

Be able to think in an integrated manner and approach problems from different perspectives.

Be able to use new information and communication technologies.

Capacidad de análisis, síntesis y razonamiento crítico.

Capacidad de análisis crítico de textos científicos.

Capacidad de aprendizaje autónomo y cooperativo.

Capacidad de divulgación del conocimiento científico.

Capacidad de iniciativa y liderazgo.

Capacidad de organización, planificación y gestión de la información.

Capacidad de resolución de problemas y toma de decisiones.

Capacidad para el aprendizaje autónomo y organizado y para la adaptación a nuevas situaciones.

Capacidad para el trabajo multidisciplinar en equipo y la cooperación.

Capacidad para reconocer y resolver problemas, así como para tomar y ejecutar decisiones.

Capacidad para transmitir ideas, problemas y soluciones y de comunicarlas a una audiencia profesional y no profesional.

Competencia en el uso del lenguaje científico oral y escrito, incluyendo el uso de la lengua inglesa.

Competencia en el uso de programas informáticos actualizados.

Creatividad, iniciativa y espíritu emprendedor.

Desarrollo de habilidades para la aplicación de los conocimientos adquiridos al mundo profesional.

Develop an ethical commitment and the capacity to participate in the social debate.

Familiarización con la elaboración, exposición y defensa pública de trabajos.

Have capacity for analysis, synthesis and critical reasoning in the application of the scientific method.

Know how to use mathematical and statistical tools to solve biological problems.

Know how to use the different bibliographic sources and biological databases and be able to use bioinformatic tools.

Know how to work responsibly and rigorously in the laboratory, considering the safety aspects in experimentation as well as the legal and practical aspects of the handling and disposal of waste.

Know the ethical and legal principles of scientific research in molecular biosciences and biomedicine.

Know the usual procedures used by scientists in the area of molecular biosciences and biomedicine to generate, transmit and disseminate scientific information.

Redactar y ejecutar proyectos relacionados con las biociencias moleculares y la biomedicina.

Reflexión ética sobre la actividad profesional.

Saber analizar datos usando herramientas estadísticas apropiadas.

Uso del inglés como vehículo de comunicación científica.

DESCRIPTION OF CONTENTS

1. R+D modality

The student will develop a hypothetical research proposal in the field of the degree. Any type of R & D project is based on the formulation of hypotheses and the design of a work plan destined to contrast the formulated hypotheses. The researcher needs to know how which experiments address the proposed hypotheses, how to apply the scientific method and how to evaluate the potential risks of the planning and in order to propose alternative routes in case the results obtained in each step lead research in other directions. Therefore, in this modality, the student must present appropriate hypotheses about the proposed topic, define the theoretical basis of the study, list the objectives of the research in relation to the hypothesis, and describe the strategies they consider appropriate for achieving the objectives. These proposals may be of basic research or propose applications, especially biomedical ones.

2. Emprendia modality

The degree is also aimed at training future entrepreneurs who could translate some of the knowledge to the business world. In this modality, the student must describe a plan for the development and/or commercialization of a biotech product / diagnostic technique / ... or to create a company / service portfolio in the field of the studies.

3. Teaching / disclosure modality

Considering the fact that some of our students may have a strong vocation for teaching, they can select this modality of TFG which will include a plan for innovation in the teaching of molecular biosciences in secondary schools or university. These works may address the revision of current models of molecular biology teaching, development of laboratory teaching experiences that can be applied realistically to the resources of schools or the design of ICT tools for the learning of molecular biosciences, among others. In this modality, it is also possible to design a project about new strategies and methodologies for the dissemination of achievements in molecular biosciences to society or industry. It is intended that the student poses an original divulging project in defining the communication model of your project (the deficit model, the participatory turn, etc.), identify and properly justify the importance of all actors involved in the project and define the type of interaction that will be among them.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at supplementary activities	1,00
Monitoring and tutoring of the bachelor's thesis	8,00
Presentation and defence of the bachelor's thesis	1,00
Total hours	**10,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Independent preparation of the bachelor's thesis	100,00
Preparation of the bachelor's thesis project	70,00
Total hours	**170,00**

TEACHING METHODOLOGY

The TFG consists of a personal work in the form of a written report, in which the student must develop all phases of an original project in one of three modalities that are proposed in the thematic units. The student will always be under the guidance of an academic tutor appointed for that purpose. The supervisor of the TFG will hold a meeting with the student at the beginning, to clearly state the objectives, implementation deadlines, resources availability and all the requirements related to ethics, safety, and confidentiality that may be involved, etc. The student must write a brief summary of the content of this meeting, with the signature of the tutor, which will be sent to the TFG committee for approval. The tutor will schedule regular follow-up meetings to check on the level of fulfillment of the work. The tutor guides the student, but the responsibility for the technical resolution of TFG rests solely with the student.

EVALUATION

The TFG commission will appoint the committees to evaluate the TFGs presented in each call. Each committee will consist of three regular professors and three substitutes (president, secretary and member) belonging to areas of knowledge who teach in the Degree. The TFG tutor can not be part of the court that evaluates the work.

For qualifying the TFG, the committee will consider the submitted written report, exposure and defense of the work, and the report from the tutor. The evaluation criteria include the following sections:

1. CONTENT

1.1 Introduction: background, current status of the topic and the need for the proposal

1.2 Working hypothesis and appropriateness of objectives

1.3 Strategies to achieve the objectives: appropriateness of the methodology and appropriate description of the work plan

1.4 Bibliography and resources used

1.5 Discussion of expected results and conclusions

2. ASPECTS OF THE WRITTEN REPORT

2.1 Formal Adequacy of memory to the rules of TFG

2.2 Clarity of writing and editing in the use of language

2.3 Use of tables, figures, charts and/or graphs

2.4 Reference format

3. ORAL PRESENTATION AND DEFENSE (reviewers)

3.1 Format of presentation

3.2 Clarity exposure

3.3 Discussion and defense

3. DEGREE OF STUDENT AUTONOMY (tutor)

3.1 In the search for information and background analysis

3.2 In the design and development of the strategies

3.3 In writing the report

See Regulation of TFG of Biochemistry and Biomedical Sciences for detailed information on the evaluation criteria.

REFERENCES