

Academic Year/course: 2022/23

27153 - Undergraduate dissertation

Syllabus Information

Academic Year: 2022/23

Subject: 27153 - Undergraduate dissertation

Faculty / School: 100 - Facultad de Ciencias

Degree: 446 - Degree in Biotechnology

ECTS: 9.0

Year: 4

Semester: Annual

Subject Type: End of Grade Dissertation

Module:

1. General information

1.1. Aims of the course

The Dissertation must be commensurate with the skills acquired by the student in the degree in biotechnology, and must manifest the knowledge, abilities, and skills acquired by the student throughout their training.

The TFG aims that students have to individually deal with a particular problem in a particular context, being able to apply and integrate the knowledge and skills acquired throughout their studies, interpret the results, discuss the results in context and transmit this information in written, verbal and graphical form. In addition, the development of the TFG should contribute to the student's ability to use efficiently the different informational skills (CI) that have been acquired over the qualification, without incurring in plagiarism and proper citation of the sources used.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning outcomes of the subject provides training and competence to contribute to some extent to their achievement.

Goal 1: No Poverty; Goal 2: Zero Hunger; Goal 3: Good Health and Well-Being; Goal 4: Quality Education; Goal 5: Gender Equality; Goal 6: Clean Water and Sanitation; Goal 7: Affordable and Clean Energy; Goal 8: Sustainable Cities and Communities; Goal 9: Responsible Consumption and Production; Goal 10: Reduced Inequalities; Goal 11: Sustainable Cities and Communities; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; Goal 14: Life Below Water; Goal 15: Life on Land; Goal 16: Peace, Justice and Strong Institutions and Goal 17: Partnerships.

1.2. Context and importance of this course in the degree

This work aims to evaluate the set of core competencies associated with the Degree in Biotechnology and constitutes the culmination of the process of learning.

1.3. Recommendations to take this course

Students at the University of Zaragoza will be able to present and to defend their Undergraduate Dissertation (herein Trabajo Fin de Grado, TFG) provided their number of ECTS credits to obtain the degree qualification is equally or less than 12 ECTS (excluding the TFG 9 ECTS).

Students participating in mobility programs will follow the rules of their home universities. Students of the Degree in Biotechnology at the University of Zaragoza must follow the regulations of the degree regarding this matter, which may be consulted at the website of the Faculty of Sciences in the section corresponding to the degree in biotechnology: <https://ciencias.unizar.es/grado-en-biotecnologia>.

2. Learning goals

2.1. Competences

At the end of this course, the student will be able to

- Integrate knowledge and skills acquired throughout all the enrolled courses of the degree.
- Know and apply in a practical way the principles and methodologies of biotechnology, in any of its branches.
- Develop a project autonomously, although supervised.

- Adequately transmit scientific information related to biotechnology in written, oral and graphical forms.

2.2. Learning goals

Acquisition of knowledge and skills related to the work performed. Elaboration of a Report with scientific quality, both in content and form, following the guidelines of the degree in biotechnology and the regulations of the Faculty of Sciences, and to present and defend said study.

2.3. Importance of learning goals

Successful completion of this course will be the culmination of the Degree, and the achievement of graduating in biotechnology.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The qualification of TFG will perform analogously to that of the rest of the subjects of this degree. To overcome TFG, the student must show that during its realization it has been able to reach the general competences for this subject. The works will be evaluated by committees that will form according to the guidelines of TFG of the degree in biotechnology, published on the website of the Faculty of Sciences.

The committee will evaluate the dissertation taking into account the quality of presented memory, its presentation and its subsequent discussion. The committee will use the headings system approved by the GGC for evaluation of the Report and of the Oral Presentation that are available on: <https://ciencias.unizar.es/trabajo-fin-de-grado-en-biotecnologia>).

Report (60% of the final mark).

The committee will evaluate both the structure and contents of the written report:

- Structure, respecting the requested schema, and capability of synthesis
- Attention to ethical standards; plagiarism and citation. Use, management and expression of bibliographic sources (bibliography, citation and appropriate expression of references). Use of bibliographic managing tools.
- Introduction, original and in context of the study
- Domain of the subject and the language of the area and matter
- Adequate and concise definition of objectives
- Methodology, either explained or referenced
- Expression of the results formally correct (proper use of units, figures, graphics, tables, statistics, etc...)
- Maturity of the discussion, domain of the subject and originality (interpretation of results and related information).

Oral Defense (40% of the final mark)

- Oral presentation: mastery of the topic, structure, clarity, quality of the material chart (language, graphs, tables, units, etc...) and adjustment to exposure time (15 minutes)
- Debate of work: domain of the subject and quality of the responses to the questions posed

In the evaluation, the committee has in addition the assessment report submitted by the directors and Rapporteur, where appropriate.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. It is based on realization of an individual and original study selected or assigned from those proposed each year. The dissertation can be carried out in:

1. The University of Zaragoza, in any of its departments, centers, and institutes of research, both own and associated.
2. Companies or institutions outside the University of Zaragoza, or during an internship in another University, Spanish or foreign, through a mobility agreement.

In the case that the dissertation was the result of an internship in companies or institutions, it should not have recognition of ECTS by external or similar practicums. Depending on the number of hours carried out and the quality of the work performed, upon express request by the party concerned the CGC may authorize the proposal of a Dissertation as a result of these practices. In any case, it is essential that the number of hours carried out as Internships is equal to or greater than the number of hours of the dissertation.

4.2. Learning tasks

1. Realization of TFG

The dissertation will be an individual work, although according to the type it can be integrated in a group. Individual or group character should be reflected in the proposal, and in the case of group work, it will be necessary to differentiate the contribution of each author in the overall work plan to make possible the personal assessment, since the Report and Defense must be public and individual.

The project must be adjusted to the 9 ECTS. The student has to spend a similar time in the production of results (110-140 hours) and in the development of other tools; get to know the study system, establish objectives, analyze and discuss findings, produce report and presentation, and prepare its public defense (110-140 hours).

2. Dissertation draft

The student must submit a TFG report with font size of minimum 11 points, 1.15 lines spacing, and margins of at least 2.5 cm. The table of contents should go just before the start of the Report that in no case shall exceed 25 pages, excluding annexes.

The TFG report can be submitted in Spanish or English. If you select the Spanish language it should contain also the summary and conclusions in English

The TFG report should pick up in the extension order and form appropriate the following sections:

- On the cover and index sheets prior to presentation, you must properly identify title, author, director (s) and speaker (if any) and Department that made the offer of the TFG and place of execution.
- Index.
- Abstract in English and Spanish, not exceeding 300 words.
- Introduction.
- Objectives and approach to work.
- Experimental part in the case, including techniques and equipment used.
- Results
- Discussion.
- Conclusions
- Bibliography (properly referenced in the text; it is recommended to use a citation management).
- Annexes (containing additional information not essential for the assessment).

Directors of a dissertation must verify that the presented report follows the guidelines set by the TFG guide before giving the approval prior to its deposit.

Directors shall give the directions to guide the student in the Dissertation according to the teaching guide for the course, taking into account the specific objectives of each particular dissertation, but always keeping in mind that the student is responsible of the entire dissertation (preparation and experiments, preparation of Report and preparation of Defense). The directors shall take into account the various aspects, particularly the used CI, which constitute an important part of the autonomous formation of the student, and the student must demonstrate responsibility, independence, involvement and professional maturity.

3. Oral Public defense

Oral public defense of the work before a TFG committee. TFG exposure by the student may be made in Spanish or English and will have a maximum duration of 15 minutes. It is recommended to use a power-point presentation with a suitable language, figures, tables, units etc?

The following contents are recommended (must be adapted according type of TFG):

- Introduction.
- Objectives and/or approach to work
- Results and discussion (together or in separate sections)
- Conclusions

4.3. Syllabus

Realization of a biotechnology-related work supervised by one or two directors. The dissertation may be:

- Type 1. Experimental work in the laboratory for the collection and interpretation of their own results.
- Type 2. A study or project related to the biotechnology industry or related sectors in any of the aspects in which a Biotechnologist is competent.
- Type 3. Interpretation of theoretical results or understanding of phenomena related to biotechnology.
- Type 4. An original and critical literature review study.
- Type 5. Any other type of study related to biotechnology approved by the CGC.

4.4. Course planning and calendar

Students can start to work in their Dissertation Study as soon as agreed with their directors and always after following the signing of the guardianship agreement. The dissertation has an annual duration, and most of the assignments are expected to be started not later than the month of November.

Any action related to this project (meetings, seminars, field work, etc...) will have to be programmed and planned according to the timetable of the student in other subjects. It must not be forgotten that the student is not a member of a research group but a student who is studying a subject and who must be evaluated by the group which welcomes him; during the dissertation period director and student must maintain a teacher-student relationship.

Calls for the Oral Defenses will be made public in advance on the website of the Faculty of Sciences, adjusting to the specific legislation for these Dissertations.

Individual activities related with the Undergraduate Dissertation can be started from the moment of signing the agreement between the director and the student.

The Dissertation can be defended in the different calls marked the Faculty and in the days of defense approved in the academic calendar of the faculty. Each academic year the student can only make use of only two calls. These dates can be consulted at the Faculty of Sciences website in the degree in biotechnology section: <https://ciencias.unizar.es/grado-en-biotecnologia>. Each of the Review Tribunals will be sovereign to cite its assigned students when they consider appropriate among the days allocated for the Dissertation defense. These schedules will be made public at the Announcement board of the Department of Biochemistry and Molecular and Cellular Biology. Distribution of Students will be distributed in each of the Tribunals by the Coordinator of the degree, and this distribution will be communicated to the students in advance. Students must deposit the Report of their Undergraduate Dissertation in the Secretariat of the Faculty of Sciences on dates marked by the Faculty (usually two weeks before the Defense).

After the deadlines established by the Faculty without the dissertation being favorably defended, the student will need to enroll again in this matter.

The Bachelor's Undergraduate Dissertations in biotechnology follow the specific degree regulations and the regulations of the Faculty of Sciences published in the website of the Faculty of Sciences:

<https://ciencias.unizar.es/trabajo-fin-de-grado-en-biotecnologia>

https://ciencias.unizar.es/normativas-asuntos-academicos#normativa_tfg