

Professional and Research Practicals

Code: 42906
ECTS Credits: 15

Degree	Type	Year	Semester
4313772 Advanced Biotechnology	OB	0	A

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)

Prerequisites

For an optimal follow-up of this module it is necessary to have a basic training on Biotechnology and basic habilities in working in a laboratory.

Objectives and Contextualisation

The objective of the module of professional and research practicals is that the student integrates in a research and/or professional environment where she/he can apply her/his specific competences and develop and/or acquire transversal ones in research groups of the UAB or other institutions, and/or in different companies from the biotechnology sector.

Out of the 25 vacancies of the Master, there will be a maximum of 10 positions for master students who wish to perform their professional practicals in a company. Selection of candidates will be done based on their CV. This module is managed by two coordinators, one in charge of assigning students to companies and the other in charge to assigning students to research laboratories from universities and research centres.

Both companies and research laboratories will have a biotechnological profile and the topic of the practicals will be related to the Master's themes. In the past recent years, the following companies and research institutions -among others- have hosted students from this Master:

- Almirall. <http://www.almirall.es/webcorp2/cda/index.jsp?langSuscripcion=1>
- Inkemia/IUCT. <http://www.inkemia.com/>
- Bioingenium. <http://www.bioingenium.net/>
- Biokit. <http://www.biokit.com/>
- Esteve. <http://www.esteve.es/EsteveFront/EST.do>
- Grifols. <http://www.grifols.com/portal/en/grifols/home>
- Corbion. <http://www.corbion.com/about-corbion/contact/europe>
- Leitat. <http://www.leitat.org/castellano/>
- Lipotec. <http://www.lipotec.com/>
- Ordesa. <http://www.ordesa.es/>
- Vytrus Biotech. <http://www.vytrus.com/>
- ICN2 (Institut Català de Nanotecnologia). <http://icn2.cat/en/>
- ICMAB (Institut de Ciència de Materials de Barcelona). <http://icmab.es/>
- IGTP (Institut de Recerca Germans Trias i Pujol). <http://www.germanstrias.org/>

Competences

- Organise, plan and manage projects.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Synthesise, weigh up alternatives and engage in critical discussion.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use advanced biotechnology tools in combination to solve problems in emerging areas of biotechnology.
- Use and manage bibliography and IT resources related to biotechnology responsibly.
- Work in a multidisciplinary team.

Learning Outcomes

1. Apply the most commonly used standard techniques in biotechnology to a particular case study.
2. Interpret experimental data obtained bearing in mind the limitations of the techniques used.
3. Interpret results from the experiments performed in order to take appropriate decisions and propose new experiments to support the results obtained.
4. Organise, plan and manage projects.
5. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
6. Synthesise, weigh up alternatives and engage in critical discussion.
7. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
8. Use and manage bibliography and IT resources related to biotechnology responsibly.
9. Work in a multidisciplinary team.

Content

The final master project will be presented in a scientific article format including the following sections: Introduction, Objectives, Materials and Methods, Results and Discussion, Conclusions and Bibliography. The work presented must be based on the research topic developed during the time allocated for the module realization.*

*Unless the requirements enforced by the health authorities demand a prioritization or reduction of these contents.

Methodology

The training activities are directly related to the performance of the research project and mostly correspond to the follow-up of the laboratory work, planning of experiments and evaluation of the obtained results. These are activities mostly supervised that are complemented by own work from the student, in aspects such as the study of bibliography and the preparation of the written report of the work and its oral defense.

*The proposed teaching methodology may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

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.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Supervision of the research work	12	0.48	6, 3, 2, 4, 5, 7, 9, 1

Type: Supervised				
Supervision of the Master's final project	300	12	6, 2, 4, 5, 7, 9, 8, 1	
Type: Autonomous				
Autonomous work in a research laboratory	30	1.2	6, 3, 2, 4, 5, 7, 9, 8, 1	
Writing up and presentation of the Master's final project thesis	30	1.2	6, 3, 2, 4, 5, 7, 9, 8, 1	

Assessment

The evaluation of the final master project is based on three aspects:

- 1) Report from advisor/advisors of the final master project (1/3 of final score).
- 2) Score given to the written final report of the project by a commission of three professors or researchers in the Biotechnology domain (1/3 of final score)
- 3) Score given to the oral presentation and discussion of the work performed by a commission of three professors or researchers in the Biotechnology domain (1/3 of final score).

*Student's assessment may experience some modifications depending on the restrictions to face-to-face activities enforced by health authorities.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Evaluation of the oral presentation and discussion	1/3 of the final grade	0.9	0.04	6, 3, 2, 4, 5, 7, 8, 1
Evaluation of the written report	1/3 of the final grade	2	0.08	6, 3, 2, 4, 5, 7, 8, 1
Report from the supervisor of the master's final project	1/3 of the final grade	0.1	0	6, 3, 2, 4, 5, 7, 9, 8, 1

Bibliography

The bibliography will be provided by the advisor of the Master thesis according to the topic of the work to be developed.

Software

During the practicals, no specific software will be used, except dedicated softwares from laboratory equipment, and/or software tools for mathematical modelling and simulation, to be determined according to the type of work.

Alumni will use standard ofimatic software packages for data processing and writing up of the report of the practicum.