

**Professional Work Experience and Research in
Structural Biochemistry and Molecular Biology**

Code: 42898
ECTS Credits: 9

| Degree | Type | Year | Semester |
|---|------|------|----------|
| 4313794 Biochemistry, Molecular Biology and Biomedicine | OT | 0 | A |

Contact

Name: Jaume Farrés Vicén

Email: Jaume.Farres@uab.cat

Use of languages

Principal working language: catalan (cat)

Prerequisites

Graduates in Biochemistry, Biotechnology, Biology, Biomedical Sciences, Genetics, Microbiology, Chemistry, Computer Science, Physics, Veterinary Medicine, Pharmacy or Medicine.

Good level of Catalan, Spanish or English.

Objectives and Contextualisation

The students should learn how to perform in a professional setting, and to develop a proactive and entrepreneurial attitude in the field of Structural Biochemistry and Molecular Biology.

Skills

- Analyse research results to obtain new biotechnological or biomedical products to be transferred to society.
- Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
- Conceive, design, develop and synthesise scientific and/or biotechnological projects within biochemistry, molecular biology or biomedicine.
- Develop critical reasoning within the subject area and in relation to the scientific or business context.
- Identify and propose scientific solutions to problems in molecular-level biological research and show understanding of the biochemical complexity of living beings.
- Integrate contents in biochemistry, molecular biology, biotechnology and biomedicine from a molecular perspective.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use and manage bibliography and IT resources related to biochemistry, molecular biology or biomedicine.
- Use scientific terminology to account for research results and present these orally and in writing.
- Work individually and in teams in a multidisciplinary context.

Learning outcomes

1. Analyse research results to obtain new biotechnological or biomedical products to be transferred to society.
2. Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
3. Design and conduct a research project in the field of biochemistry, molecular biology or biomedicine.
4. Develop and apply knowledge of molecular mechanisms within a real R+D+I project or a production process at a public or private organisation.
5. Develop critical reasoning within the subject area and in relation to the scientific or business context.
6. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
7. Propose innovative projects in biochemistry, molecular biology or biomedicine, starting from a holistic perspective on the knowledge acquired.
8. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
9. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
10. Use and manage bibliography and IT resources related to biochemistry, molecular biology or biomedicine.
11. Use scientific terminology to account for research results and present these orally and in writing.
12. Work individually and in teams in a multidisciplinary context.

Content

Practice internship in a public research center or in a private industry, while performing some tasks typical of the field of Biochemistry, Molecular Biology or Biomedicine, emphasizing basic and applied aspects of Structural Biochemistry and Molecular Biology.

Methodology

The practice internship will be carried out according to a preset training project. Reading of selected scientific articles. Tutorships. Presentation and discussion of results. Writing and oral presentation of a final report on the activities performed during the practice internship.

It will include 200 hours of supervised practice work and 25 hours of independent self-directed work.

Activities

| Title | Hours | ECTS | Learning outcomes |
|-------------------------|-------|------|---------------------------------------|
| Type: Supervised | | | |
| Practice internship | 200 | 8 | 1, 4, 5, 3, 7, 8, 2, 6, 9, 12, 10, 11 |
| Type: Autonomous | | | |
| Final report writing | 24 | 0.96 | 1, 4, 5, 3, 7, 8, 2, 6, 9, 12, 10, 11 |

Evaluation

The final report will have the requirements indicated in the Study Guide of the Master's Dissertation.

To be evaluated, the student must deliver the evaluation report issued by the internship supervisor/academic tutor and the final report, before the established deadline. In addition, the student will have to make the oral presentation. If any of these requirements is not fulfilled, then the final grade will be "No avaluable".

Important: If plagiarism is detected in any of the works submitted, the student may fail the whole module.

Evaluation activities

| Title | Weighting | Hours | ECTS | Learning outcomes |
|--|-----------|-------|------|---------------------------------------|
| Assessment of final report | 35% | 0 | 0 | 1, 4, 5, 3, 7, 8, 2, 6, 9, 12, 10, 11 |
| Evaluation report issued by the internship supervisor or the academic tutor. | 30% | 0 | 0 | 1, 4, 5, 3, 7, 8, 2, 6, 9, 12, 10, 11 |
| Oral presentation | 35% | 1 | 0.04 | 1, 5, 8, 2, 6, 12, 11 |

Bibliography

Bibliography will include that of each Master module taken by the student plus that specific of the topic chosen for the professional and research practice internship.