

External work placement

Code: 103269
ECTS Credits: 12

Degree	Type	Year	Semester
2501922 Nanoscience and Nanotechnology	OT	4	0

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Prerequisites

It is recommended that students who enroll in the external academic practicum have passed the first two years of their degree and have completed 180 credits.

Objectives and Contextualisation

The main objectives of the course are that students can put into practice the knowledge acquired in the degree, to bring them closer to the working world and to help them with their future work integration.

Internships can only be carried out in the following entities: companies, spin-offs, start-ups, technology centers, scientific and technical services and technical divisions of universities and research centers. Internships may NOT be conducted in research groups at universities or research centers.

Competences

- Adapt to new situations.
- Apply ethical principles and legislative standards to the field of nanoscience and nanotechnology.
- Apply the concepts, principles, theories and fundamental facts of nanoscience and nanotechnology to solve problems of a quantitative or qualitative nature in the field of nanoscience and nanotechnology.
- Apply the general standards for safety and operations in a laboratory and the specific regulations for the use of chemical and biological instruments, products and materials in consideration of their properties and the risks.
- Be ethically committed.
- Communicate orally and in writing in one's own language.
- Demonstrate knowledge of legislation on intellectual property in the field of knowledge and application of nanoscience and nanotechnology.
- Demonstrate knowledge of the concepts, principles, theories and fundamental facts related with nanoscience and nanotechnology.
- Handle the standard instruments and materials of physical, chemical and biological testing laboratories for the study and analysis of phenomena on a nanoscale.
- Interpret the data obtained by means of experimental measures, including the use of computer tools, identify and understand their meanings in relation to appropriate chemical, physical or biological theories.
- Manage the organisation and planning of tasks.

- Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
- Operate with a certain degree of autonomy.
- Reason in a critical manner
- Recognise the terms used in the fields of physics, chemistry, biology, nanoscience and nanotechnology in the English language and use English effectively in writing and orally in all areas of work.
- Resolve problems and make decisions.
- Show initiative and an enterprising spirit.
- Show motivation for quality.
- Show sensitivity for environmental issues.
- Work correctly with the formulas, chemical equations and magnitudes used in chemistry.
- Work on the synthesis, characterisation and study of the properties of materials on a nanoscale from previously established procedures.

Learning Outcomes

1. Adapt to new situations.
2. Apply ethical principles and legal standards to activities in the company during work experience.
3. Be ethically committed.
4. Communicate orally and in writing in one's own language.
5. Correctly apply concepts and theories related with nanoscience and nanotechnology to the professional world
6. Integrate acquired knowledge and skills to solve problems in the professional field.
7. Manage the organisation and planning of tasks.
8. Obtain, manage, analyse, synthesise and present information, including the use of digital and computerised media.
9. Operate with a certain degree of autonomy.
10. Produce a summary in English of the work done.
11. Produce an explanatory report of the results obtained in a professional study in fields related with nanoscience and nanotechnology.
12. Properly handle reagents and chemistry products.
13. Reason in a critical manner
14. Recognise the legal standards for activities in the company during work experience.
15. Resolve problems and make decisions.
16. Show initiative and an enterprising spirit.
17. Show motivation for quality.
18. Show sensitivity for environmental issues.
19. Show the necessary skill to develop synthesis and characterisation studies of materials in the professional field
20. Show the necessary skill to handle the instruments required for professional work in fields related with nanoscience and nanotechnology.
21. Work correctly with the formulas, chemical equations and magnitudes used in chemistry.

Content

The content of the internship will depend on the nature of the company or institution where the internship will be performed.

Before starting the internship, the student must register and, for registration, the following items are required:

- An entity-UAB collaboration agreement duly completed and signed by the coordinator of the lecture (the template of the agreement can be found on both the website and the Virtual Campus)
- A work plan agreed with the host entity and validated by the coordinator of the lecture (which must be included in the agreement mentioned above). The validation of the work plan will be done with the signing of the agreement.

Methodology

Internships can be done in either of the two semesters of the course or during the summer.

Internships can only be carried out in the following entities: companies, spin-offs, start-ups, technology centers, scientific and technical services and technical divisions of universities and research centers. Internships may NOT be conducted in research groups at universities or research centers.

Duration of the internship: between 190 and 350 hours.

The institution can remunerate internships (optional).

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- A work plan agreed with the host entity and validated by the coordinator of the lecture (which must be included in the agreement mentioned above). The validation of the work plan will be done with the signing of the agreement.

Steps to enroll:

- Find an entity to perform the internship (a list of potential entities can be found in the website and the Virtual Campus)
- Discuss the feasibility of the chosen option with the coordinator via e-mail / Teams / personal interview
- Contact the entity to check the availability of internships, topics, timetables and the person of the entity who will act as tutor
- Fill in the internship agreement (which you will find in both the website and the Virtual Campus) and send it to the coordinator of the lecture to sign it.
- With the agreement signed, contact the Academic Management to register. Registration also includes an insurance. The registration period is permanently open.
- Once these steps are done, the internships can then begin

15 minutes will be allocated during the course to answer the UAB institutional surveys.

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			
guided activities	40	1.6	1, 5, 6, 12, 3, 8, 14, 21
preparation of the report and the oral presentation	18	0.72	4, 17, 13, 11, 10
Type: Supervised			
supervised activities	61	2.44	1, 5, 2, 19, 20, 7, 6, 12, 3, 18, 13, 14, 15, 21
Type: Autonomous			
self-work	180	7.2	1, 5, 2, 16, 19, 20, 17, 7, 6, 12, 3, 18, 8, 9, 13, 14, 15, 21

Assessment

Upon completion of the internship, the student will provide his/her tutor with the evaluation template (can be found in the Virtual Campus) and will prepare a written report following the template found in the Virtual Campus. The student will also have to prepare an oral presentation of the stay following the guidelines found in the Virtual Campus. The assessment of the tutor of the entity will count for 40% of the mark, the written report will count for 35% of the mark, and the oral defense will count for 25% of the mark.

When approaching the evaluation period, the coordinator of the lecture will set the deadlines to submit the final report and the evaluations from the external tutor. Then, already in the evaluation period, the coordinator will inform the students about the day and time to carry out the oral presentation, which, in principle, will be done via Teams.

There are three assessment periods: (1) in January/February for students enrolled during the 1st semester, (2) in June/July for students enrolled during the 2nd semester, and (3) in September for students enrolled in the 2nd semester, but who have not finished their internship before June.

Students who are not enrolled in the 2nd semester and who want to do the internship in summer will have to sign an enrollment commitment before starting the internship and will enroll in the 1st semester of the following year to be evaluated in January of the following year.

The evaluation process will focus on your integration, adaptation, organization and tasks performed. We would like to ask you to be careful and strict in presenting the scientific and technical parts but please do it in a concise manner.

If any of the three marks (tutor assessment, written report and oral defense) is less than 5, the student will have a grade of "Not assessable" and must enroll again in the next call of the academic year.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
oral presentation	25%	1	0.04	4, 17, 13
tutor evaluation	40%	0	0	1, 5, 2, 16, 19, 20, 17, 7, 6, 12, 3, 18, 8, 9, 13, 14, 15, 21
written report	35%	0	0	4, 8, 13, 11, 10

Bibliography

N/A

Software

N/A