

**COURSE DATA****Data Subject**

Code	42942
Name	External internships
Cycle	Master's degree
ECTS Credits	7.0
Academic year	2024 - 2025

Study (s)

Degree	Center	Acad. year	Period
2109 - Master's Degree in Experimental Techniques in Chemistry	Faculty of Chemistry	1	Annual

Subject-matter

Degree	Subject-matter	Character
2109 - Master's Degree in Experimental Techniques in Chemistry	4 - External internships	External Practice

Coordination

Name	Department
ESTEVE TURRILLAS, FRANCESC ALBERT	310 - Analytical Chemistry

SUMMARY

Subject dedicated to internships in companies or agencies of the chemical industry or related, selected by the Academic Coordinating Commission of the Master. The students perform tasks in the laboratory using the studied experimental techniques, in order to enable them to implement their knowledge to the resolution of the real problems of the company or organization.

PREVIOUS KNOWLEDGE**Relationship to other subjects of the same degree**



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

Other requirements

Prior knowledge of chemistry and experimental work in the laboratory of chemistry taught in the degrees indicated in the recommended income profile for the student of the master's degree are required.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

2109 - Master's Degree in Experimental Techniques in Chemistry

- Saber aplicar los conocimientos adquiridos y ser capaces de resolver problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio.
- Poseer las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.
- Ser capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios.
- Saber comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades.
- To acquire basic skills to develop laboratory work in biomedical research.
- Be able to make quick and effective decisions in professional or research practice.
- Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Realizar las labores propias de su profesión, tanto en empresas privadas como en organismos públicos, llevando a cabo estudios basados en el uso de técnicas experimentales, en distintos ámbitos tales como: medioambiental, agroalimentario, sanitario (farmacéutico y clínico), cosmético y en general de la industria del sector químico y afines.
- Realizar estudios relacionados con el análisis y/o la caracterización de sustancias químicas tales como: control de calidad, diseño de protocolos de trabajo para laboratorios, diseño e implementación de procesos de acreditación y validación, diseño y desarrollo de proyectos I+D+I, emisión de informes, certificaciones y/o dictámenes, etc.
- Ser capaces de planificar y gestionar los recursos disponibles de un laboratorio químico, teniendo en cuenta los principios básicos de la calidad, prevención de riesgos, seguridad y sostenibilidad.
- Seleccionar la instrumentación química comercializada apropiada para el estudio a realizar y de aplicar sus conocimientos para utilizarla de manera correcta.

**LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

Listed here are the results of learning of the subject matter, due to the fact that consists of only one subject, coincide with the specific objectives to achieve in the teaching-learning process of the subject.

At the end of the teaching-learning process the learner will be able to:

1. Work at a company or organization related to the chemical industry or related fields, in accordance with its planning and needs
2. Use the scientific data bases, abstracts, full text articles, documentation, etc. , required for initiating and conducting a particular study
3. Select and use properly the advanced methods of sample preparation and analytical technique most appropriate for a specific study
4. Working in the field of application required for a particular study, with the maximum safety to the operator and the environment
5. Apply the methods of calibration and data processing more appropriate to a particular study
6. Develop a clear and concise memory of the results obtained from a job
7. Explain in a clear and concise manner the conclusions of a work and the implications of interest to the company or agency that has been developed
8. Regarding the Sustainable Development Goals (SDGs), it is expected that students will be able to know in this subject how to apply the knowledge learned to guarantee an inclusive, equitable, and quality education and promote learning opportunities for everyone (SDG 4), to acquire a special sensitivity for sustainable management of water (SDG 6), raw materials and energy sources (SDG 7), as well as for an environmentally friendly and sustainable development (SDGs 11 , 12, 13, 14 and 15), in addition to being able to design, select and/or develop efficient products, chemical processes, and analytical methodologies (SDG 7) that minimize their impact on the environment (SDGs 14 and 15), using alternative raw materials and reducing wastes (SDG 11).

DESCRIPTION OF CONTENTS**1. Realization of a work proposed by the company or institution where the student will be integrated to carry it out.**

The External Practices subject is based on the completion of autonomous and individual work that each student must carry out under the supervision of a tutor from the Company, supervised by the academic tutor, and in accordance with the training plan that will be delivered to the student. at the beginning of the practices. The work will be carried out in a collaborating entity in accordance with the External Practice Regulations of the University of Valencia.

The training program examples that follow correspond to standard models of some internship positions and can serve as a guide for preparing the specific proposals for each offer.

Quality laboratories and/or analysis laboratories
Search and organization of regulatory documentation



Sampling

Treatment, conservation and conditioning of samples

Use of instrumental techniques. (HPLC, GC, FTIR,)

Data processing

Preparation of internal reports

R&D laboratories

Bibliographic review of a topic

Organization of bibliographic information as a team

Design of experiments

Analysis and characterization

Processing and presentation of experimental data

Preparation of technical tables and graphs

Consulting (hygiene, environmental safety,...)

Search and organization of regulatory documentation

Field work, sampling

Supervision of procedures and application of regulations (occupational, environmental,)

Application of REACH legislation

Preparation of reports.

Production plant (chemical processes).

Training on the production process

Control of raw materials

Production planning

Control production parameters

Verification of process conditions

Data processing and presentation

Preparation of technical reports

Data processing/quality control.

Collection and management of databases

Data processing (multivariate analysis)

Analysis of experimental data and decision making

Preparation and/or supervision of quality assurance protocols



WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	70,00	100
Development of individual work	17,50	0
Internship	156,00	0
TOTAL	243,50	

TEACHING METHODOLOGY

Students will carry out the work of external practices in a company or agency, and developing a memory of it.

The management of the External Practices is provided by the service ADEIT of the UV, which makes the organization always under the supervision of the Academic Coordinating Commission of the master. A list of the companies of the chemical sector and related, selected by the academic Coordination Commission, as well as the characteristics specified by each one of them is offered to the students. The students do the choice depending on your interests.

Students will have two Tutors:

- Prof. Tutor at the University (the same of the Master project)
- Tutor in the Company, which will be assigned by the Company.

Prof. Tutor at the University receives direct information from the student. This lets you know if the expectations arising from the agreement with the company are satisfied in order to act and solve any kind of difficulty, conflict, etc. In addition, at the end of practices each student fills out a form that will survey about the development of the practices. This enables the academic Coordinating Commission make further study of the quality offered by partner companies, that is of interest to the Organization of the next year.

EVALUATION

FIRST CALL

Students must complete a final report on their stay in the company considering the recommendations contained in article 22 of the External Practice Regulations of the University of Valencia as described in the teaching methodology section. This memory will conform in formal aspects to the template published on the subject's disk drive.



The company tutor must prepare a report assessing the different generic and practical skills acquired by the student. This report is sent to the internship management body (ADEIT), which makes it available to the corresponding academic tutor. The academic tutor will evaluate the quality of the report presented by the student and the follow-up of the meetings with the tutor.

The final grade obtained by the student will be the one corresponding to the sum of the following percentages: 50% grade from the external tutor and 50% grade from the academic tutor.

Evaluable activities by the Tutor of company through the realization of the work (Tutor of company report)

Competences to evaluate: CB6, CB7, CB8, CG1, CG2, CG3, CE1, CE2 y CE3

WEIGHT 50 %

Presented memory (Tutor of University report)

Competences to evaluate: CB9 CB10 y CE7

WEIGHT 50 %

The minimum overall grade to pass the subject is 5.0.

The hours of attendance at the assigned internship position are mandatory and non-recoverable, in accordance with the internship contract signed by all parties.

SECOND CALL

The evaluation will be carried out in the same way as in the first call.

Regarding attendance (non-recoverable activity), non-compliance with the hours stipulated in the contract will prevent passing the subject, unless ADEIT renegotiates a new contract with the company that allows the student to carry out the internship hours stipulated in the study plan. before the end of the evaluation period.

The obvious copying or plagiarism of any task that is part of the evaluation will mean the impossibility of passing the subject, subsequently subjecting yourself to the appropriate disciplinary procedures.