

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

<b>Code</b>	34212
<b>Name</b>	External internships
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	6.0
<b>Academic year</b>	2022 - 2023

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1110 - Degree in Chemistry	Faculty of Chemistry	4	Second term

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1110 - Degree in Chemistry	12 - External internships	External Practice

**Coordination**

<b>Name</b>	<b>Department</b>
IBAÑEZ PUCHADES, RAFAEL	320 - Inorganic Chemistry

**SUMMARY**

Internships is an optional subject worth 6 ECTS credits scheduled to be taken during the 8th semester (year 4) of the Degree in Chemistry.

Internships primarily aim to enable students to apply and supplement the knowledge acquired during their academic training and to promote their acquisition of skills that prepare them for the exercise of professional activities, facilitate their employability and encourage their entrepreneurial capacity.

Internships must be defined in a training project according to one of the pre-established models and which specifies the educational goals and tasks that the student must pursue during his or her stay at the company or institution. The training project should be established by agreement between tutors, either on a proposal from the collaborating institution or from the University of Valencia. Also, the contents of internships must be defined so as to ensure the direct relationship between the skills to be acquired and the studies completed.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

**1110 - Degree in Chemistry :**

**1108 - Degree in Chemistry :**

R4-OBLIGATION TO HAVE SUCCESSFULLY COMPLETED THE COURSE

- 34183 - General Chemistry I
- 34184 - General Chemistry II
- 34185 - Chemistry laboratory I
- 34186 - Chemistry laboratory II
- 34187 - Mathematics I
- 34188 - Mathematics II
- 34189 - Physics I
- 34190 - Physics II
- 34191 - Biology
- 34192 - Informatics for Chemistry
- 34193 - Physical Chemistry I
- 34194 - Physical Chemistry II
- 34196 - Physical Chemistry Laboratory I
- 34198 - Inorganic Chemistry I
- 34199 - Inorganic Chemistry II
- 34201 - Inorganic Chemistry Laboratory I
- 34203 - Organic Chemistry I
- 34204 - Organic Chemistry II
- 34206 - Organic Chemistry Laboratory I
- 34228 - Analytical Chemistry I
- 34229 - Analytical Chemistry II
- 34231 - Analytical Chemistry Laboratory I
- 34183 - General Chemistry I
- 34184 - General Chemistry II
- 34185 - Chemistry laboratory I
- 34186 - Chemistry laboratory II
- 34187 - Mathematics I
- 34188 - Mathematics II
- 34189 - Physics I



34190 - Physics II  
34191 - Biology  
34192 - Informatics for Chemistry  
34193 - Physical Chemistry I  
34194 - Physical Chemistry II  
34196 - Physical Chemistry Laboratory I  
34198 - Inorganic Chemistry I  
34199 - Inorganic Chemistry II  
34201 - Inorganic Chemistry Laboratory I  
34203 - Organic Chemistry I  
34204 - Organic Chemistry II  
34206 - Organic Chemistry Laboratory I  
34228 - Analytical Chemistry I  
34229 - Analytical Chemistry II  
34231 - Analytical Chemistry Laboratory I

#### **Other requirements**

This course aims to supplement and apply fundamental knowledge acquired by students during their academic training. Therefore, to be allowed to take this subject, students must have passed all subjects in year 1 and year 2 and at least 150 ECTS credits in core and compulsory subjects.

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

##### **1108 - Degree in Chemistry**

- Demonstrate ability to work in teams both in interdisciplinary teams and in an international context.
- Demonstrate a commitment to ethics, equality values and social responsibility as a citizen and as a professional.
- Demonstrate the ability to adapt to new situations.
- Acquire a permanent sensitivity to quality, the environment, sustainable development and the prevention of occupational hazards.
- Evaluate, interpret and synthesise chemical data and information.
- Interpret data from observations and measurements in the laboratory in terms of their significance and the theories that underpin them.
- Relate theory and experimentation.
- Recognise and evaluate chemical processes in daily life.



- Develop sustainable and environmentally friendly methods.
- Prepare reports, surveys and industrial and environmental projects in the field of chemistry.
- Students must be able to apply their knowledge to their work or vocation in a professional manner and have acquired the competences required for the preparation and defence of arguments and for problem solving in their field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.
- Express oneself correctly, both orally and in writing, in any of the official languages of the Valencian Community.
- Have basic skills in the use of information and communication technology and properly manage the information obtained.

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

The previous section includes the competences contained in the document VERIFICA. This subject addresses part of the learning results of the matter External Internships that allow to acquire specific knowledge of chemistry, cognitive skills and general skills recommended by the EUROPEAN CHEMISTRY THEMATIC NETWORK (ECTN) for the Chemistry Eurobachelor® Label. The following table lists the learning outcomes acquired in the subject External Internships related to the competences of the degree in Chemistry.

<b>COMPETENCES AND COGNITIVE SKILLS</b>	
<b>The learning process should allow the degree graduates to demonstrate:</b>	
	<b>Competences of the subject External Internships that contemplate the learning outcomes EUROBACHELOR®</b>
Competences for the evaluation, interpretation and synthesis of information and chemical data.	Interpret data from observations and measurements in the laboratory in terms of their significance and the theories that underpin them..(CE20).
	Interpret data from observations and measurements in the laboratory in terms of their significance and the theories



Ability to recognize and implement science and the practice of measurement.	that underpin them..(CE20).
Competences to present and argue scientific issues orally and in writing to a specialized audience.	Prepare reports, surveys and industrial and environmental projects in the field of chemistry..(CE27). Demonstrate ability to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences and using information technology, as appropriate. (CG6).

**COMPETENCES AND COGNITIVE SKILLS RELATED TO THE PRACTICE OF CHEMISTRY**

**The learning process should allow the degree graduates to demonstrate:**

	<b>Competences of the subject External internships that contemplate the learning outcomes EUROBACHELOR®</b>
Capabilities necessary to perform standard laboratory procedures as well as to use instrumentation in synthetic and analytical works, in both cases in relation to both organic and inorganic systems.	Relate theory and experimentation..(CE22).
Capacities to monitor, observe and measure the chemical properties, facts or changes, and perform their registration (collection) and documentation in a systematic and reliable way.	Relate theory and experimentation..(CE22). Recognise and evaluate chemical processes in daily life.(CE23).
Ability to interpret data derived from observations and laboratory measurements in terms of their relevance, and relate them to the appropriate theory.	Interpret data from observations and measurements in the laboratory in terms of their significance and the theories that underpin them..(CE20). Relate theory and experimentation..(CE22). Recognise and evaluate chemical processes in daily





	life.(CE23).
Ability to perform risk assessments of the use of chemical substances and laboratory procedures.	Develop sustainable and environmentally friendly methods. (CE25).

<b>GENERAL COMPETENCES</b>	
<b>The learning process should allow the degree graduates to demonstrate:</b>	
	<b>Competences of the subject External Internships that contemplate the learning outcomes EUROBACHELOR®</b>
Ability to apply practical knowledge to solve problems related to qualitative and quantitative information.	Relate theory and experimentation.(CE22).  Recognise and evaluate chemical processes in daily life.(CE23).
Competences in information management, in relation to primary and secondary sources, including information retrieval through on-line searches.	Have basic skills in the use of information and communication technology and properly manage the information obtained. (CT2).
Ability to analyse materials and synthesize concepts.	Develop capacity for analysis, synthesis and critical thinking.. (CG1).  Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration. (CB3).



<p>Ability to adapt to new situations and make decisions.</p>	<p>Demonstrate the ability to adapt to new situations..(CG9).</p> <p>Recognise and analyse new problems and plan strategies to solve them. (CE15).</p> <p>Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration. (CB3).</p>
<p>Skills related to information technology such as word processing, spreadsheet, recording and storage of data, internet use related to the subjects.</p>	<p>Demonstrate ability to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences and using information technology, as appropriate. (CG6).</p> <p>Have basic skills in the use of information and communication technology and properly manage the information obtained. (CT2).</p>
<p>Planning and time management skills.</p>	<p>Develop capacity for analysis, synthesis and critical thinking. (CG1).</p>
<p>Interpersonal skills to interact with other people and get involved in team work.</p>	<p>Demonstrate ability to work in teams both in interdisciplinary teams and in an international context.(CG5).</p> <p>Demonstrate a commitment to ethics, equality values and social responsibility as a citizen and as a professional. (CG7).</p> <p>Demonstrate the ability to adapt to new situations.(CG9).</p>



<p>Competences in oral and written communication, in one of the main European languages, in addition to the language of the country of origin.</p>	<p>Demonstrate ability to work in teams both in interdisciplinary teams and in an international context..(CG5).</p> <p>Demonstrate a commitment to ethics, equality values and social responsibility as a citizen and as a professional. (CG7).</p> <p>Express oneself correctly, both orally and in writing, in any of the official languages of the Valencian Community. (CT1).</p> <p>Have basic skills in the use of information and communication technology and properly manage the information obtained.(CT2).</p>
<p>Study skills necessary for professional development. These will include the ability to work autonomously.</p>	<p>Demonstrate leadership and management skills, entrepreneurship, initiative, creativity, organization, planning, control, leadership, decision making and negotiation..(CG3).</p> <p>Demonstrate ability to work in teams both in interdisciplinary teams and in an international context..(CG5).</p> <p>Demonstrate the ability to adapt to new situations..(CG9).</p> <p>Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.(CB5).</p>
<p>Ethical commitment to the European Code of Conduct: <a href="http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf">http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf</a></p>	<p>Acquire a permanent sensitivity to quality, the environment, sustainable development and the prevention of occupational hazards.(CG10).</p>





Demonstrate a commitment to ethics, equality values and social responsibility as a citizen and as a professional. (CG7).

Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration. (CB3).



- 1 Be able to plan production, sequence tasks and manage inventory.
- 2 Know the principles governing working life: hierarchy, punctuality, order, etc.
- 3 Develop skills of cooperation with other professionals.
- 4 Know the production and manufacturing systems.
- 5 Learn the basics of security in industrial processes.
- 6 Be able to apply the principles and methods of quality.
- 7 Have the skills to write professional reports.
- 8 Know the characteristics and importance of sustainable chemical industry.
- 9 Know transformation systems to obtain a final product according to a specification given.
- 10 Be familiar with accreditation and certification systems.
- 11 Know and practice teamwork dynamics with a responsible, professional, ethical behaviour and from a



gender perspective.

12 Show ability to adapt to new situations.

- To be able to defend in public the obtained results.
- To be able to relate the chemistry to other disciplines.

## DESCRIPTION OF CONTENTS

### 1. Practices realized in companies

The course involves conducting independent and individual work, under the supervision of a company tutor and the tutoring of an academic tutor, in accordance with the training plan delivered to students at the start of their internships. Work placements will take place at a partner institution in accordance with the University of Valencia Internship Regulations.

## WORKLOAD

ACTIVITY	Hours	% To be attended
Internship		100
Development of individual work	12,00	0
<b>TOTAL</b>	<b>12,00</b>	

## TEACHING METHODOLOGY

Each student will be assigned a company tutor and an academic tutor. The company tutor will be assigned by the collaborating entity and the academic tutor will be assigned by the Commission of External Internships of the center, on the proposal of the Coordinator of External Internships of the center. Both tutors will coordinate the development of the activities established in the formative project and will be in contact to resolve any doubt or problematic situation.

It will be the mission of the company tutor to provide the student with the specifications of the work to be done and to advise him on everything he deems appropriate for carrying out the internship.

The academic tutors, in a meeting that will take place before the start of the internship, will be in charge of explaining to the students the evaluation criteria and preparation of the report and also, where appropriate, of resolving any incident that the student communicates in the development of the practices.

At the end of the concerted internship period, the student will deliver the INTERNSHIP REPORT to the University tutor, which consists of two independent documents:

- Activities report, in which the work carried out in practice is described. This part of the report must contain the approval of the company tutor.



- Evaluation report of the internship by the student which, where appropriate, may take the form of a personalized on-line form.

For the writing of the report, the models available in the Virtual Classroom of the subject will be used. Both documents contain a declaration of responsibility, to be signed electronically, about the veracity and confidentiality of the data and information therein.

For the evaluation of the report, the students must upload two documents in pdf format to the corresponding task in the group's Virtual Classroom before the date indicated in the course schedule.

If the signatures of the report were not digital, in addition to uploading the files to the Virtual Classroom in pdf format, the students will give the academic tutor a paper copy with the signatures.

## EVALUATION

### FIRST CALL

Students must make a final report of the stay in the company taking into account the recommendations contained in article 22 of the Regulation of External Practices of the University of Valencia, as described in the teaching methodology section. This report will be adjusted in formal aspects to the template published in the Virtual Classroom of the subject.

The company tutor must prepare a report assessing different aspects such as: organization, initiative, interest, interpretation and evaluation of data, punctuality, integration in the work group and assimilation of new technologies, among other aspects. Such report is sent to the Internship management agency (ADEIT), which makes it available to the corresponding academic tutor. The academic tutor will evaluate the quality of the memory presented by the student in accordance with the rubric published in the Virtual Classroom of the subject.

The final grade obtained by the student will correspond to the sum of the following percentages: 40% grade from the external tutor, 40% grade from the final report, 10% for the student's participation in employment forums organized on campus and other duly justified complementary activities, such as attendance at short courses, seminars and conferences related to the practice. The remaining 10% corresponds to the direct qualification of the academic tutor, in which the degree of participation and follow-up of the meetings with the tutor, the presentation of partial reports and the fulfillment of deadlines and deliveries will be evaluated.

The subject is considered approved if the weighted sum of all the evaluation items exceeds five points, provided that the report score exceeds five points.

The qualification will be made officially in an evaluation record for each group of the subject, signed by the President of the External Internship Commission or the Faculty's External Internship Coordinator.

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), failure to comply with the hours stipulated in the contract will prevent passing the subject except if 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.

## REFERENCES

### Basic

- REGLAMENT DE PRÀCTIQUES EXTERNES DE LA UNIVERSITAT DE VALÈNCIA Aprovat en Consell de Govern de 26 de juny de 2012. ACGUV 131/2012
- Real Decreto 592/2014, de 11 de julio, por el que se regulan las prácticas académicas externas de los estudiantes universitarios.