



Universidad  
de Huelva

FACULTAD DE CIENCIAS EXPERIMENTALES

# GUIA DOCENTE

CURSO 2024-25

## GRADO EN QUÍMICA

### DATOS DE LA ASIGNATURA

**Nombre:**

INTRODUCCIÓN A LA INVESTIGACIÓN

**Denominación en Inglés:**

Introduction to Research

**Código:**

757509315

**Tipo Docencia:**

Presencial

**Carácter:**

Optativa

**Horas:**

	Totales	Presenciales	No Presenciales
<b>Trabajo Estimado</b>	75	30	45

**Créditos:**

Grupos Grandes	Grupos Reducidos			
	Aula estándar	Laboratorio	Prácticas de campo	Aula de informática
3	0	0	0	0

**Departamentos:**

QUIMICA.PROF. JOSE CARLOS VILCHEZ MARTIN

**Áreas de Conocimiento:**

QUIMICA INORGANICA

**Curso:**

4º - Cuarto

**Cuatrimestre**

Segundo cuatrimestre

## DATOS DEL PROFESORADO (\*Profesorado coordinador de la asignatura)

Nombre:	E-mail:	Teléfono:
* Jose Maria Munoz Molina	jose.molina@dqcm.uhu.es	959 219 946

### Datos adicionales del profesorado (Tutorías, Horarios, Despachos, etc... )

DEPARTAMENTO QUÍMICA PROFESOR JOSÉ CARLOS VÍLCHEZ MARTÍN

ÁREA DE CONOCIMIENTO QUÍMICA INORGÁNICA

UBICACIÓN: CIQSO, Edificio Robert Grubbs, despacho 202

CORREO ELECTRÓNICO: jose.molina@dqcm.uhu.es

TUTORÍAS 1C y 2C:

Lunes 11- 13 h.

Miércoles 11- 13 h.

Viernes 11- 13 h.

## DATOS ESPECÍFICOS DE LA ASIGNATURA

### 1. Descripción de Contenidos:

#### 1.1 Breve descripción (en Castellano):

Esta asignatura se ofrece en el cuarto curso de la carrera de química. El curso proporciona las habilidades prácticas necesarias para establecer el estado actual de un tema de investigación, identificar las necesidades de investigación, realizar búsquedas en bases de datos, desarrollar propuestas de investigación y comunicar de manera efectiva los resultados científicos. La asignatura es útil para los estudiantes que quieran adentrarse en el campo de la investigación, aprender el uso de herramientas de gestión para edición de documentos científicos (Trabajo de Fin de Grado, Tesis, etc.) y mejorar las habilidades de comunicación oral y escrita.

#### 1.2 Breve descripción (en Inglés):

This optional subject is offered in the fourth year of the chemistry degree. The course provides practical skills needed

to establish the current state of the art of a topic, identify research needs, conduct library and information search,

develop research proposals and communicate effectively scientific results.

The subject is useful for students who want to enter the field of research, learn the use of management tools for

scientific documentation, and improve writing and speaking communications skills.

### 2. Situación de la asignatura:

#### 2.1 Contexto dentro de la titulación:

This optional subject is offered in the fourth year of the degree. The course provides practical skills needed to establish

the current state of the art of a topic, identify research needs, conduct library and information search, develop research

proposals and communicate effectively scientific results. The subject is useful for students who want to enter the field

of research, learn the use of management tools for scientific documentation and improve writing and speaking

communications skills.

As mentioned before, the foundations of research in chemistry stand on the different lessons included herein. Thus,

any potential job directly related with the chemical field will undoubtedly be affected by this knowledge.

## 2.2 Recomendaciones

The only prerequisite is the user-level management of information and communications technologies, which will be used repeatedly throughout the semester in a variety of activities.

## 3. Objetivos (resultado del aprendizaje, y/o habilidades o destrezas y conocimientos):

The general objective is to provide tools for the development of research activities. After completing this course,

students will be able to:

Access resources and services available through Campus Library Services.

Manage and search online databases using keywords, subjects, and advanced options.

Identify key terms and develop a search strategy.

Extract information and summarize scientific articles.

Know vocabulary and writing, publishing and public presentation of scientific papers.

Correctly cite resources.

Design and write proposals for research projects.

Efficiently communicate research results to a specialized audience.

## 4. Competencias a adquirir por los estudiantes

### 4.1 Competencias específicas:

**P5:** . Interpretación de datos procedentes de observaciones y medidas en el laboratorio en términos de su significación y de las teorías que la sustentan.

**Q4:** Capacidad para reconocer y llevar a cabo buenas prácticas en el trabajo científico y profesional.

**Q5:** Competencia para presentar, tanto en forma escrita como oral, material y argumentación científica a una audiencia especializada

**Q6:** Destreza en el manejo y procesado informático de datos e información química.

#### 4.2 Competencias básicas, generales o transversales:

**CT2:** Desarrollo de una actitud crítica en relación con la capacidad de análisis y síntesis.

**CT4:** Capacidad de utilizar las competencias informáticas e informacionales (C12) en la práctica profesional.

**CT3:** Desarrollo de una actitud de indagación que permita la revisión y avance permanente del conocimiento.

### 5. Actividades Formativas y Metodologías Docentes

#### 5.1 Actividades formativas:

- Grupo teórico práctico.

#### 5.2 Metodologías Docentes:

- Clases presenciales relativas a los contenidos teóricos y prácticas (problemas) de la asignatura, utilizando recursos didácticos tales como transparencias, presentaciones informatizadas y videos.

- Test y resolución de cuestiones teórico-prácticas.

- Discusión de artículos científicos.

- Cualquier actividad dirigida que ayude a la adquisición de conocimientos, habilidades y destrezas.

- Seguimiento de otras tareas que se les asignen.

- Resolución de dudas.

#### 5.3 Desarrollo y Justificación:

- Theoretical lectures, using teaching materials such as blackboard, computer projections and photocopies of figures, diagrams and tables.

- Interactive teaching sessions in which students are expected to attend and actively participate. Furthermore, there are a number of specific, regular activities: reading, learning/using digital tools, and presenting/discussing research articles.

### 6. Temario Desarrollado

## Lecture 1. The Research Method.

Concepts of research method. Definitions. Some methods of knowledge. Research techniques. Stages of the scientific

method. Establishment of the hypotheses. Hypothesis test. Results analysis. Conclusions.

## Lecture 2. Sources of Information.

Literature. Information sources. Books. Monographs. Magazines. Technical reports. Thesis. Database. References.

Information search.

## Lecture 3. Information Management.

Reference Managers. Desktop and web versions. How to add information and cite references. Profile and workgroup.

## Lecture 4. Research Design.

Setting research goals. Work plan design. Research planification and laboratory notebook.

## Lecture 5. Diffusion of scientific results.

Scientific conferences. Scientific articles, patent, etc. Scope and impact of the results.

## Lecture 6. The scientific article.

What is a scientific article?. Types of scientific articles. Structure of scientific article. Phases and rules for the development of a

scientific article. Review and publication process. Quality criteria.

## Lecture 7. Misconduct.

Examples of misconduct. Ethical guidelines. Practical cases.

## **7. Bibliografía**

### 7.1 Bibliografía básica:

### 7.2 Bibliografía complementaria:

- Hugh G. Gauch Jr. Scientific Method in Practice, Cambridge University Press;

1st edition (2002), ISBN : 9780521017084.

- Stephen S . Carey, A Beginner's Guide to Scientific Method, Wadsworth

Publishing; 3 edition (2003), ISBN : 9780534584504.

- E. Bright Wilson Jr. An Introduction to Scientific Research, Dover Publications;  
Rev. Sub. edition, ISBN : 9780486665450.
- Michael J. Katz, From Research to Manuscript: A Guide to Scientific-Writing,  
Springer; 2nd ed. (2009), ISBN : 9781402094668.

## 8. Sistemas y criterios de evaluación

### 8.1 Sistemas de evaluación:

- Examen final.
- Evaluación continua.

### 8.2 Criterios de evaluación relativos a cada convocatoria:

#### 8.2.1 Convocatoria I:

The knowledge acquired in each unit will be evaluated by the different activities of the subject: the theoretical exam and the academic activities, which help to make a continuous evaluation of the student.

Exercises/participation (20%). Students are expected to attend all lectures. Students are expected to discuss and participate in class activities and discussions. The assignments will consist of the resolution of exercises related with the issues studied during the course.

Oral Presentation (30%). Each student will give an oral presentation in conference format for science subject-matters. The goal will be to communicate research results to a specialized audience.

Written exam (50%). One final exam that consist of ten questions about the issues studied during the course.

The final mark will be an average between the aforementioned three parts. It is mandatory a minimum final mark of 5 points out

of 10 to pass the subject.

#### 8.2.2 Convocatoria II:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

#### 8.2.3 Convocatoria III:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

pass the subject.

#### 8.2.4 Convocatoria extraordinaria:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.



### 8.3 Evaluación única final:

#### 8.3.1 Convocatoria I:

Students who choose this option will perform:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

#### 8.3.2 Convocatoria II:

Students who choose this option will perform:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

#### 8.3.3 Convocatoria III:

Students who choose this option will perform:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

#### 8.3.4 Convocatoria Extraordinaria:

Students who choose this option will perform:

- Written exam (100%); One final exam that consist of ten questions about the issues studied during the course. It is mandatory a minimum final mark of 5 points out of 10 to pass the subject.

**9. Organización docente semanal orientativa:**

Fecha	Grupos Grandes	G. Reducidos				Pruebas y/o act. evaluables	Contenido desarrollado
		Aul. Est.	Lab.	P. Camp	Aul. Inf.		
17-02-2025	2	0	0	0	0		TEMA 1
24-02-2025	2	0	0	0	0	Actividad dirigida Tema 1	TEMA 2
03-03-2025	2	0	0	0	0		TEMA 2
10-03-2025	2	0	0	0	0	Actividad dirigida Tema 2 Cuestionario Tema 2	TEMA 3
17-03-2025	2	0	0	0	0		TEMA 3
24-03-2025	2	0	0	0	0	Actividad dirigida Tema 3	TEMA 4
31-03-2025	2	0	0	0	0		TEMA 4
07-04-2025	2	0	0	0	0	Actividad dirigida Tema 4 Cuestionario Tema 4	TEMA 5
21-04-2025	2	0	0	0	0		TEMA 5
28-04-2025	2	0	0	0	0		TEMA 5
05-05-2025	2	0	0	0	0		TEMA 5
12-05-2025	2	0	0	0	0	Actividad dirigida Tema 5 Cuestionario Tema	TEMA 6
19-05-2025	2	0	0	0	0		TEMA 6
26-05-2025	2	0	0	0	0	Actividad dirigida Tema 6	TEMA 7
02-06-2025	2	0	0	0	0		TEMA 7

**TOTAL            30            0            0            0            0**