

**Treball de Fi de Màster****2014/2015**

Codi: 42430

Crèdits: 15

Titulació	Tipus	Curs	Semestre
4313385 Química Industrial i Introducció a la Recerca Química/Industrial Chemistry and Introduction to Chemical Research	OB	0	2

**Professor de contacte**

Nom: Ramón Alibés Arqués

Correu electrònic: Ramon.Alibes@uab.cat

**Utilització de llengües**

Llengua vehicular majoritària: anglès (eng)

Grup íntegre en anglès: No

Grup íntegre en català: Sí

Grup íntegre en espanyol: No

**Prerequisites**

No requirements needed

**Objectius**

The student carries out a pilot project in basic or applied research which shall demonstrate the ability to apply knowledge and skills acquired during the Master.

**Competències**

- Analyse and use the data in autonomous fashion in complex laboratory experiments and relate them with the appropriate chemical, physical or biological theories, and including the use of primary bibliographic sources.
- Be capable of working in a team and adapting to multidisciplinary teams.
- Correctly apply new information capture and organisation technologies to solve problems in professional activity.
- Correctly evaluate the risks and environmental and socio-economic impact associated to special chemical substances.
- Evaluate responsibility in the management of information and knowledge in the field of Industrial Chemistry and Chemical Research.
- Foster innovation and entrepreneurship in chemical industry and research.
- Identify information in the scientific literature using the appropriate channels and integrating said information to approach and contextualise a research issue.
- Innovate in the spaces and environments of the field of work, showing initiative and an entrepreneurial spirit.
- Operate with advanced instrumentation for chemical evaluation and structural determination.
- Show skills in analysing, describing, organising, planning and managing projects.
- Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
- Students should be able to integrate knowledge and face the complexity of making judgements from information which, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements
- Students should know how to apply the knowledge acquired and the capacity to solve problems in new or little-known areas within broader (or multidisciplinary) contexts related to their area of study

- Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
- Use scientific terminology in the English language to defend experimental results in the context of the chemistry profession.

## Resultats d'aprenentatge

1. Analyse the results of research in order to obtain new products or processes while evaluating their quality, and industrial and commercial viability for transfer to society.
2. Apply the specific research methodology, techniques and resources to research and produce innovative results in a certain area of specialisation.
3. Be capable of working in a team and adapting to multidisciplinary teams.
4. Correctly apply new information capture and organisation technologies to solve problems in professional activity.
5. Design advanced experiments for the study of chemical systems.
6. Draft an extensive introduction based on the latest bibliography in adequate fashion for written presentation in the English language.
7. Evaluate responsibility in the management of information and knowledge in the field of Industrial Chemistry and Chemical Research.
8. Evaluate the risks and impact associated with the use of new techniques and products in the context of an experimental research project.
9. Identify information in the scientific literature using the appropriate channels and integrating said information to approach and contextualise a research issue.
10. Innovate in the spaces and environments of the field of work, showing initiative and an entrepreneurial spirit.
11. Produce a complete research report written in the English language and orally present it in English.
12. Relate the experimental results obtained with the previous bibliography and discuss their relevance in the area of specialisation.
13. Show skills in analysing, describing, organising, planning and managing projects.
14. Student should possess an ability to learn that enables them to continue studying in a manner which is largely self-supervised or independent
15. Students should be able to integrate knowledge and face the complexity of making judgements from information which, being incomplete or limited, include reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements
16. Students should know how to apply the knowledge acquired and the capacity to solve problems in new or little-known areas within broader (or multidisciplinary) contexts related to their area of study
17. Students should know how to communicate their conclusions, knowledge and final reasoning that they hold in front of specialist and non-specialist audiences clearly and unambiguously
18. Use scientific terminology in the English language to defend experimental results in the context of the chemistry profession.
19. Use the results of an experimental research project in the area of chemistry to foster innovation and entrepreneurship.
20. Use the right instrumentation in accordance with the objectives of the proposed research project.

## Continguts

See methodology section.

## Metodologia

The Thesis Master work will consist in defining, planning and developing a project in the field of chemistry applied to industry or research, which demonstrates that the student is able to use in practice the knowledge and skills acquired during his studies.

The Thesis Master work will be performed in a research laboratory or a company. In this case, the issue on which the project will address will be selected by common agreement between the laboratory or company, the tutor and student and this will include the supervision of a responsible of the workplace.

In all cases, a professor in the Department of Chemistry at UAB will be appointed to perform the duties of tutor of the project. Individual student work will be evaluated by an Evaluation Committee appointed for that purpose by the Master Coordination Committee.

In this module, the student must show an active participation not only in the definition and development but also in planning the project also demonstrating initiative and organizational skills.

At the end of the stage, the student will prepare a report to be presented and defended in English with an evaluation commission appointed for that purpose by the Coordination Committee.

## Activitats formatives

Títol	Hores	ECTS	Resultats d'aprenentatge
Tipus: Dirigides			
Tutories	5	0,2	5, 9, 14, 17, 18
Tipus: Supervisades			
Treball supervisat pel tutor	150	6	3, 5, 9, 14, 16, 19
Tipus: Autònomes			
Treball autònom de l'estudiant	219	8,76	2, 6, 12, 13, 14, 15, 16, 18

## Avaluació

Supervision of the research process, written output, thesis presentation and discussion.

The final grade will be obtained from:

- 50% Oral presentation and discussion
- 20% Written output
- 30% Final report of the activities carried out by the student provided by the thesis supervisor or tutor.

## Activitats d'avaluació

Títol	Pes	Hores	ECTS	Resultats d'aprenentatge
Final report by thesis advisor	30%	0	0	3, 15, 16, 18
Oral presentation and discussion	50%	1	0,04	1, 11, 17, 18, 19
Written output	20%	0	0	4, 6, 7, 8, 9, 10, 11, 12, 15, 18, 20

## Bibliografia

No bibliography

