

Course guides

330150 - AQ - Chemical Analysis

Last modified: 05/05/2020

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Compulsory subject).

Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: M. MONTSERRAT SOLÉ SARDANS

Others: CONCEPCIÓ LAO LUQUE

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. (ENG) Conceptes fonamentals de l'anàlisi qualitatiu i quantitatiu
2. (ENG) Conèixer els conceptes de volumetria, gravimetria y les seves aplicacions en l'anàlisi de la matèria,
3. (ENG) Adquirir coneixements bàsics de principals tècniques d'anàlisi instrumental.
4. (ENG) Desenvolupar habilitats en el treball de laboratori, de manera que l'alumne sigui capaç d'obtenir dades analítiques fiables.
5. (ENG) Capacitat per a comprendre i aplicar els principis de coneixements bàsics de l'anàlisi química i les seves aplicacions a l'anàlisi de la matèria.

Transversal:

6. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
7. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
8. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
9. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours large group	45,0	30.00
Self study	90,0	60.00
Hours small group	15,0	10.00

Total learning time: 150 h



CONTENTS

(ENG) 1. INTRODUCCIÓ A L'ANÀLISI QUÍMICA. MÈTODES VOLUMÈTRICS I GRAVIMÈTRICS D'ANÀLISI

Full-or-part-time: 75h

Theory classes: 23h

Laboratory classes: 7h

Self study : 45h

(ENG) 2. MÈTODES INSTRUMENTALS D'ANÀLISI

Full-or-part-time: 75h

Theory classes: 22h

Laboratory classes: 8h

Self study : 45h

ACTIVITIES

(ENG) 1. PRÀCTIQUES DE LABORATORI

Full-or-part-time: 40h

Laboratory classes: 15h

Self study: 25h

(ENG) 2. RESOLUCIÓ DE PROBLEMES I/O EXERCICIS. AVALUACIÓ CONTINUADA

Full-or-part-time: 22h

Theory classes: 2h

Self study: 20h

(ENG) 3. PROVES INDIVIDUALS D'AVAUACIÓ

Full-or-part-time: 51h

Theory classes: 6h

Self study: 45h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Skoog, Douglas A., i altres. Fundamentos de química analítica. 8ª ed. Madrid: Thomson, 2005. ISBN 8497323335.
- Harris, Daniel C. Análisis químico cuantitativo [on line]. 3ª ed. Barcelona: Reverté, 2006 [Consultation: 23/07/2020]. Available on: http://www.ingebook.com/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=7708. ISBN 8429172246.
- Christian, Gary D. Química analítica. 6ª ed. México: Limusa, 2009. ISBN 9789701072349.
- Rubinson, Kenneth A.; Rubinson, Judith F. Análisis instrumental. Madrid: Prentice Hall, 2001. ISBN 8420529885.
- Skoog, Douglas A.; Holler, F. James; Nieman, Timothy. Principios de análisis instrumental. 5ª ed. Madrid: McGraw-Hill, 2001. ISBN 8448127757.

Complementary:

- Bermejo Barrera, A.; Bermejo Barrera, Mª del Pilar; Bermejo Barrera, Adela. Química analítica general, cuantitativa e instrumental. Ed. corr. y ampl. Madrid: Paraninfo, 1991. ISBN 8428318085.
- Harvey, David. Química analítica moderna. Madrid: McGraw-Hill Interamericana, 2002. ISBN 8448136357.