



## Course guides

### 330054 - Q - Chemistry

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 ELECTRICAL ENGINEERING (Syllabus 2009). (Compulsory subject).  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Compulsory subject).  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Compulsory subject).  
BACHELOR'S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).  
BACHELOR'S DEGREE IN ENERGY AND MINING RESOURCE ENGINEERING (Syllabus 2012). (Compulsory subject).  
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Compulsory subject).  
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Compulsory subject).  
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Compulsory subject).

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

#### LECTURER

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**Coordinating lecturer:** ROSER GORCHS ALTARRIBA

**Others:** PERE BUSQUETS RUBIO - CONCEPCION LAO LUQUE - M. MONTSERRAT SOLE SARDANS -  
IMMACULADA TORRA BITLLOCH

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Generical:**

1. (ENG) Capacitat per a comprendre i aplicar els principis de coneixements bàsics de la química general, química orgànica i inorgànica i les seves aplicacions a l'enginyeria.

**Transversal:**

2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.
3. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
4. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

#### TEACHING METHODOLOGY

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#### LEARNING OBJECTIVES OF THE SUBJECT

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## STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	20.00
Hours small group	30,0	20.00
Self study	90,0	60.00

**Total learning time:** 150 h

## CONTENTS

### (ENG) 1. ESTRUCTURA ATÒMICA I ENLLAÇ QUÍMIC

**Full-or-part-time:** 38h

Theory classes: 6h

Laboratory classes: 10h

Self study : 22h

### (ENG) 2. DISSOLUCIONS I ESTEQUIOMETRIA

**Full-or-part-time:** 52h

Theory classes: 12h

Laboratory classes: 10h

Self study : 30h

### (ENG) 3. REACCIÓ QUÍMICA: ASPECTES TERMODINÀMICS I CINÈTICS

**Full-or-part-time:** 60h

Theory classes: 10h

Laboratory classes: 12h

Self study : 38h

## ACTIVITIES

### (ENG) 1. PRÀCTIQUES DE LABORATORI

**Full-or-part-time:** 40h

Laboratory classes: 15h

Self study: 25h

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**Full-or-part-time:** 24h

Laboratory classes: 4h

Self study: 20h

### (ENG) 3. PROVES INDIVIDUALS D'AVUACIÓ CONTINUADA

**Full-or-part-time:** 16h

Theory classes: 4h

Self study: 12h

## GRADING SYSTEM

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## BIBLIOGRAPHY

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### Basic:

- Bell, Jerry, i altres. Química: un proyecto de American Chemical Society. Barcelona: Reverté, 2005. ISBN 8429170014.
- Kotz, J. C.; Treichel, P. M.; Harman, Patrick A. Química y reactividad química. 5ª ed. México: International Thomson, 2003.
- Petrucci, R. H., i altres. Química general: principios y aplicaciones modernas [on line]. 10ª ed. Madrid: Prentice Hall, 2011 [Consultation: 02/07/2019]. Available on: [https://discovery.upc.edu/iii/encore/record/C\\_\\_Rb1510237?lang=cat](https://discovery.upc.edu/iii/encore/record/C__Rb1510237?lang=cat). ISBN 9788483226803.
- Reboiras, M. D. Química: la ciencia básica. Madrid: International Thomson Editores, 2006. ISBN 8497323475.
- Chang, R. Fundamentos de química. México: McGraw-Hill, 2011. ISBN 9786071505415.
- Atkins, P. W.; Jones, L. L. Principios de química: los caminos del descubrimiento. 3ª ed. Buenos Aires: Médica Panamericana, 2006. ISBN 9789500600804.
- Orozco, C.; González, Mª N.; Pérez, A. Problemas resueltos de química aplicada. Madrid: Paraninfo, 2011. ISBN 9788428380928.
- Reboiras, M. D. Problemas resueltos de química: la ciencia básica. Madrid: Thomson, 2007. ISBN 9788497325417.
- Tècniques bàsiques al laboratori [on line]. Barcelona: Universitat Politècnica de Catalunya, 2010 [Consultation: 05/02/2020]. Available on: <http://hdl.handle.net/2099.2/1241>.

### Complementary:

- American Chemical Society. Chemistry in the community: ChemCom a project of the American Chemical Society. 5th ed. New York: W.H. Freeman and Co, 2006. ISBN 9780716789192.
- American Chemical Society. QuimCom: química en la comunidad. 2ª ed. México: Addison Wesley Longman, 1998. ISBN 9684443072.