

330054 - Q - Chemistry

Coordinating unit:	330 - EPSEM - Manresa School of Engineering	
Teaching unit:	750 - EMIT - Department of Mining, Industrial and ICT Engineering	
Academic year:	2019	
Degree:	BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory) BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory) BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Teaching unit Compulsory) BACHELOR'S DEGREE IN ENERGY AND MINING RESOURCE ENGINEERING (Syllabus 2012). (Teaching unit Compulsory) BACHELOR'S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Teaching unit Optional)	
ECTS credits:	6	Teaching languages: Catalan

Teaching staff

Coordinator:	ROSER GORCHS ALTARRIBA
Others:	PERE BUSQUETS RUBIO - FRANCESC XAVIER DE LAS HERAS CISA - CONCEPCION LAO LUQUE - M. MONTSERRAT SOLE SARDANS - IMMACULADA TORRA BITLLOCH

Degree competences to which the subject contributes

Generical:

- (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:

- 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.
- TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
- 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.

Learning objectives of the subject

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Study load

Total learning time: 150h	Hours large group:	30h	20.00%
	Hours medium group:	0h	0.00%
	Hours small group:	30h	20.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

Content

(ENG) 1. ESTRUCTURA ATÒMICA I ENLLAÇ QUÍMIC	Learning time: 38h Theory classes: 6h Laboratory classes: 10h Self study : 22h
(ENG) 2. DISSOLUCIONS I ESTEQUIOMETRIA	Learning time: 52h Theory classes: 12h Laboratory classes: 10h Self study : 30h
(ENG) 3. REACCIÓ QUÍMICA: ASPECTES TERMODINÀMICS I CINÈTICS	Learning time: 60h Theory classes: 10h Laboratory classes: 12h Self study : 38h

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Planning of activities

(ENG) 1. PRÀCTIQUES DE LABORATORI	Hours: 40h Laboratory classes: 15h Self study: 25h
.	Hours: 24h Laboratory classes: 4h Self study: 20h
(ENG) 3. PROVES INDIVIDUALS D'AVUACIÓ CONTINUADA	Hours: 16h Theory classes: 4h Self study: 12h

Bibliography

Basic:

- Chang, R. Fundamentos de química. México: McGraw-Hill, 2011. ISBN 9786071505415.
- 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>. ISBN 9788483226803.
- Atkins, P. W.; Jones, L. L. Principios de química: los caminos del descubrimiento. 3ª ed. Buenos Aires: Médica Panamericana, 2006. ISBN 9789500600804.
- Reboiras, M. D. Química: la ciencia básica. Madrid: International Thomson Editores, 2006. ISBN 8497323475.
- Bell, Jerry, i altres. Química: un proyecto de American Chemical Society. Barcelona: Reverté, 2005. ISBN 8429170014.
- 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.
- UPCommons: Vídeos. Tècniques bàsiques al laboratori [on line]. 2010 [Consultation: 03/07/2017]. Available on: <<http://upcommons.upc.edu/handle/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.

Others resources: