

Course guides

330155 - EPP - Process and Product Engineering

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, Spanish

LECTURER

Coordinating lecturer: ROSER GORCHS ALTARRIBA

Others: MARIA DOLORS GRAU VILALTA - FRANCESC XAVIER DE LAS HERAS CISA

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. (ENG) Interpretar el diagrama de flux de qualsevol procés químic-industrial.
2. (ENG) Analitzar i distingir el funcionament del processos tèrmics, catalítics, a elevada pressió i electrolítics, i la seva problemàtica ambiental.

Transversal:

3. 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.
4. 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.
5. 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.
6. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
7. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

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

Total learning time: 150 h



CONTENTS

(ENG) Contingut 1: Processos de Reacció Tèrmics

Full-or-part-time: 58h
Theory classes: 16h 30m
Laboratory classes: 5h 30m
Self study : 36h

(ENG) Contingut 2: Processos de Reacció Catalítics

Full-or-part-time: 28h
Theory classes: 7h 30m
Laboratory classes: 2h 30m
Self study : 18h

(ENG) Contingut 3: Processos de Reacció a Elevada Pressió

Full-or-part-time: 25h
Theory classes: 7h 30m
Laboratory classes: 2h 30m
Self study : 15h

(ENG) Contingut 4: Processos de Reacció Electrolítics

Full-or-part-time: 20h
Theory classes: 6h
Laboratory classes: 2h
Self study : 12h

(ENG) Contingut 5: Obtenció de Productes Finals

Full-or-part-time: 19h
Theory classes: 7h 30m
Laboratory classes: 2h 30m
Self study : 9h

ACTIVITIES

(ENG) TÍTOL DE L'ACTIVITAT 1. - POWERPOINT INTERACTIU "LA PLANTA QUÍMICA EN IMATGES"

Full-or-part-time: 8h
Self study: 8h



(ENG) TÍTOL DE L'ACTIVITAT 2.-VISITA A UNA INDÚSTRIA

Full-or-part-time: 5h

Theory classes: 2h

Self study: 3h

(ENG) TÍTOL DE L'ACTIVITAT 2.1.- TREBALL VISITA INDÚSTRIA

Full-or-part-time: 10h

Self study: 10h

(ENG) TÍTOL DE L'ACTIVITAT 3.- INTERPRETACIÓ, ELABORACIÓ I ENTREGA DELS "DIAGRAMES DE FLUX" DE CADASCUNS DELS PROCESSOS QUÍMICS ESTUDIATS

Full-or-part-time: 22h

Self study: 22h

(ENG) TÍTOL DE L'ACTIVITAT 4. QÜESTIONARIS ATENEA

Full-or-part-time: 12h

Self study: 12h

(ENG) TÍTOL DE L'ACTIVITAT 5. TREBALL GLOBAL: EXPOSICIÓ D'UN TREBALL EN GRUP AMB TORN DE PREGUNTES

Full-or-part-time: 14h

Theory classes: 4h

Self study: 10h

(ENG) TÍTOL DE L'ACTIVITAT 6. PROVA INDIVIDUAL D'AVALUACIÓ ESCRITA.

Full-or-part-time: 17h 30m

Theory classes: 1h 30m

Self study: 16h

(ENG) TÍTOL DE L'ACTIVITAT 7. PROVA INDIVIDUAL D'AVALUACIÓ ESCRITA DIAGRAMA DE FLUX.

Full-or-part-time: 12h

Theory classes: 2h

Self study: 10h

GRADING SYSTEM



BIBLIOGRAPHY

Basic:

- Kural, O., ed. Coal: resources, properties, utilization, pollution. Istanbul: Orhan Kural, 1994. ISBN 9759570114.
- Metcalf & Eddy. Wastewater engineering: treatment, disposal and reuse. 3rd ed. revised. New York: McGraw-Hill, 1991. ISBN 0070416907.
- Vian Ortuño, A. Introducción a la química industrial. 2ª ed. Barcelona: Reverté, 1994. ISBN 842917933X.
- Büchner, W., i altres. Industrial inorganic chemistry. New York: VCH, 1989. ISBN 3527266291.
- Chenier, P. J. Survey of industrial chemistry. 2nd ed. New York: VCH Publishers, 1992. ISBN 1560810823.
- Stocchi, E. Industrial chemistry. Chichester: Ellis Horwood, 1990. ISBN 0134573188.

Complementary:

- Meyers, R. A. Handbook of chemicals production processes. New York: McGraw-Hill, 1986. ISBN 0070417652.
- Shreve, R. N. Shreve's chemical process industries. 5th ed. New York: McGraw-Hill, 1984. ISBN 0070571473.
- Kirk, R. E.; Othmer, D. F. Enciclopedia de tecnología química. México: Limusa, 1998. ISBN 9681855760.
- Riegel, E. R. Riegel's handbook of industrial chemistry. 10th ed. New York: Kluwer Academic. Plenum, 2003. ISBN 0306474115.