

COURSE: ASSETS MAINTENANCE

SUBJECT: Assets maintenance

MODULE: Management and Optimization of
Production and Sustainability

STUDIES: Master in Chemical Engineering

Page 1 of 4

GENERAL CHARACTERISTICS*

Type: Basic formation Mandatory Optional
 Master Thesis Internship

Duration: Semestral

Semester / s: two

Number of ECTS credits: 3

Languages: English, may include sessions in Spanish or Catalan.

DESCRIPTION

BRIEF DESCRIPTION AND JUSTIFICATION

This course focuses on one of the professional options of chemical engineers: the management of the assets' maintenance. Without pretending to train specialists in the subject, the main tools to guarantee the reliability of the facilities will be presented and the reactive and predictive maintenance will be compared, including aspects of Industry 4.0.

COMPETENCES

- CB6 - The student has knowledge and understanding of what constitutes a basis or an opportunity to be original by developing and/or applying ideas, often in a research context.
- CB8 - The student is able to integrate knowledge and handle complexity involving judgments based on incomplete or limited information, including issues on social and ethical responsibilities linked to the application of his/her knowledge and judgments.
- CE7 - The student is able to manage and organize companies and production systems and services, applying knowledge and skills of industrial organization, business strategy, planning and logistics, commercial and labour laws, financial accounting and costs.
- CE11 - The student knows how to manage and perform verification and control of facilities, processes and products as well as certifications, audits, validating, testing and reporting.

PREVIOUS REQUIREMENTS*

Admission to the Master in Chemical Engineering from the Universitat Ramon Lull.

CONTENTS

1. Reliability
2. Methods of inspection.
3. Reactive maintenance.
4. Predictive maintenance.

* These features should not be modified without the approval of the academic bodies responsible for the academic higher-level structures (subject, module and / or study plan).

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Page 2 of 4

METHODOLOGY

LEARNING ACTIVITIES*

	Credits ECTS	Competences
Lectures presenting concepts and procedures	0,72	CB6, CB8, EC7, CE11
Lectures solving exercises, problems and cases	0,57	CB6, CB8 EC7, CE11
Presentations	0.04	CB6, CB8, EC7, CE11
Personal study activities by students	1,63	CB6, CB8 EC7, CE11
Evaluation activities (tests, problem resolution, ...)	0.04	CB6, CB8, EC7, CE11
TOTAL	3.00	

TEACHING METHODOLOGY

This course uses the following teaching methods:

- Lectures presenting concepts and procedures (possibly including demonstrations) by the teacher.
- Lectures solving exercises, approach / problem solving, and presentation / discussion of cases by the teacher, with the active participation of students.
- Instructions done by the teacher in order to review, discuss and answer questions about the materials and topics presented in the lectures that explain concepts, solve exercises, problems and cases. It includes visits to companies and facilities.
- Oral presentations by student.
- Personal work of the student to acquire the skills of each subject.
- Oral or written tests to assess skills acquired.

The subject is held in Spanish and English.

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Page 3 of 4

EVALUATION

EVALUATION METHODS *

Assessment methods	Weight	competences
Exams	60%	CB6, CB8, EC7
Assignments and presentations	25%	CB6, CB8 EC7, CE11
Participation	fifteen%	CB6, CB8, EC7, CE11

LEARNING OUTCOMES

The student will have acquired:

- Knowledge that provides the base or opportunity of being original in the development and / or implementation of ideas.
- Ability of integrating knowledge and cope with the complexity of formulating judgments based on information that although being incomplete or limited, include reflections on social and ethical responsibilities related to the application of their knowledge and judgments.
- Ability to lead and organize enterprises as well as production systems and services.
- Ability to lead and perform the verification and control of facilities, processes and products.

QUALIFICATION

The final exam has a weight of 60%.

The works and presentations have a weight of 25%.

The qualification by participation is obtained in function of the attendance to class and of the valuation of the contributions realized in class when the different subjects that appear during the course are debated.

EVALUATION OF COMPETENCES

The evaluation of competences will be performed as indicated in the table of evaluation methods.

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PERSONA CIÈNCIA EMPRESA
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Page 4 of 4

BIBLIOGRAPHY (Recommended and accessible to students.)

Notes from the professor.

DOCUMENT HISTORY

PREVIOUS CHANGES

LAST REVISION :

J. Sempere. January 2019