

Combustion

Academic Year: (2017 / 2018)

Review date: 28-04-2017

Department assigned to the subject: Department of Bioengineering and Aerospace Engineering

Coordinating teacher: NAVARRO CAVALLE, JAUME

Type: Compulsory ECTS Credits : 3.0

Year : 4 Semester : 1

STUDENTS ARE EXPECTED TO HAVE COMPLETED

Fluid Mechanics
Thermal Engineering

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

Basic knowledge of combustion processes, their physical laws, and their applications to propulsion

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to combustion phenomena and fuels.
2. Thermochemistry.
3. Chemical kinetics.
4. Analysis of simple reacting systems.
5. Mass and heat diffusion of gas mixtures. Evaporation of liquids

LEARNING ACTIVITIES AND METHODOLOGY

The methodology combines

- 1) lecture classes presenting the different subjects
- 2) problem solving sessions
- 3) computer lab sessions
- 4) homework sets of exercises
- 5) quizzes

Both homework and quizzes contribute to continuous evaluation mark.

Tutorials can be both personally or through Aula Global

ASSESSMENT SYSTEM

In order to pass the subject in the ordinary call, two requirements need to be met:

- 1) to have a MINIMUM mark of 4.0 over 10 in the end-of-term exam;
- 2) to have a minimum overall mark of 5.0 over 10 (weighing 60% the end-of-term exam mark and 40% the mark of the continuous evaluation).

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|---|----|
| % end-of-term-examination: | 60 |
| % of continuous assessment (assignments, laboratory, practicals...): | 40 |

BASIC BIBLIOGRAPHY

- I. GLASSMAN, R. YETTER, N. GLUMAC COMBUSTION, 5TH EDITION, ACADEMIC PRESS, 2015
- STEPHEN R. TURNS AN INTRODUCTION TO COMBUSTION, 3RD EDITION, MAC GRAW-HILL INTERNATIONAL, 2012

ADDITIONAL BIBLIOGRAPHY

- C.K. LAW Combustion Physics, Cambridge University Press, 2006
- K.K. KUO Principles of combustion, 2nd. edition, Wiley, 2005