Industrial heat and cold

Academic Year: (2019 / 2020)   **Review date: 10-02-2020**

Department assigned to the subject: Thermal and Fluids Engineering Department

Coordinating teacher: SANTANA SANTANA, DOMINGO JOSE

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Heat Transfer
Thermal Engineering

OBJECTIVES

The students will be able to calculate and analyze refrigeration and heating systems

DESCRIPTION OF CONTENTS: PROGRAMME

Heating and cooling loads
Industrial refrigeration systems
Industrial heating systems
Heat exchangers

LEARNING ACTIVITIES AND METHODOLOGY

Learning activities will consist of:
- Lectures where the fundamental concepts will be presented. Lecture notes and basis references will be provided.
- Assignments will be given so the students can self-evaluate their knowledge and acquire the required skills.
- The assignments proposed to the students will be discussed during the lectures.
- Labs: assignments will be solved in the computer room.

ASSESSMENT SYSTEM

The assessment system will consist of 1) a final exam globally evaluating the knowledge, competences and skills acquired and 2) continuous assessment (evaluation of the assignments, labs, et-cetera).

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

BASIC BIBLIOGRAPHY

- Duffie JA, Beckman WA Solar Engineering of Thermal Processes, John Wiley & Sons, 2013

- Herold KE, Radermacher R, Klein SA Absorption chillers and heat pumps, CRC Press, 1996

- Incropera FP, Dewitt DP, Bergman TL, Lavine AS Fundamentals of Heat and Mass Transfer, John Wiley & Sons, 2007
- Moran MI, Shapiro HN Engineering Thermodynamics, John Wiley & Sons, 2010

ADDITIONAL BIBLIOGRAPHY

- Hewitt G F Process Heat Transfer, CRC Press, 1994

- Lienhard JH IV, Lienhard JH V A heat transfer text book, Phlogiston, 2008

BASIC ELECTRONIC RESOURCES

- Lienhard JH V, Lienhard JH IV . A heat transfer text book: http://web.mit.edu/lienhard/www/ahtt.html