

25214 - Meteorology and climatology

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	277 - Degree in Environmental Sciences
ECTS	6.0
Course	2
Period	First Four-month period
Subject Type	Compulsory
Module	---

1. Basic info

1.1. Recommendations to take this course

1.2. Activities and key dates for the course

2. Initiation

2.1. Learning outcomes that define the subject

2.2. Introduction

3. Context and competences

3.1. Goals

3.2. Context and meaning of the subject in the degree

3.3. Competences

3.4. Importance of learning outcomes

4. Evaluation

5. Activities and resources

5.1. General methodological presentation

The learning process used in this subject is based on the following methodology:

- Autonomous work of the student, especially regarding the study and comprehension of the theoretical concepts.
- Working into groups, including three or four students, to develop practical aspects of the subject.

5.2. Learning activities

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The learning process designed for this subject is based on the following activities:

- Theoretical sessions, including exposure of the theory and problems resolution.
- Laboratory sessions, that include the presentation of the report elaborated from the results obtained.
- Making of a work related with some environmental aspects of the subject.

5.3.Program

THEORY

Unit 1: Introduction

Unit 2: The Atmosphere

Unit 3: Energy balance in the atmosphere

Unit 4: Thermodynamics of the atmosphere

Unit 5: Atmospheric Phenomena

Unit 6: Atmospheric Dynamics

Unit 7: The Climate

Unit 8: Climatic Classification

Unit 9: Climate Change

PROGRAM OF LABORATORY PRACTICALS

Exercise 1.- Incident Radiation in a photovoltaic panel

- a). Voltage Dependence generated by the angle of incidence.
- b). Voltage dependence generated by distance.

Exercise 2.- Determining air density and its relative humidity

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- a) Determining air density.
- b) Determining dew point temperature
- c) Determining relative humidity of air.

Exercise 3.- Determining adiabatic air coefficient.

- a) Measuring the MASS period of the oscillator.
- b). Calculating the adiabatic coefficient of air

Exercise 4.- Transmission of weather report

- a) Decoding and graphic transcription of weather report. Encoding
- b) Cifrado y transcripción gráfica de partes meteorológicos. Encoding and graphic transcription weather reports.

5.4.Planning and scheduling

The estimated amount of work that the student must dedicate to this subject is about 150 h (6 ECTS), during 15 weeks, including holidays.

5.5.Bibliography and recommended resources

- Basic Bibliography
- Sendiña Nadal, Irene. Fundamentos de meteorología / Irene Sendiña Nadal, Vicente Pérez Muñuzuri . Santiago de Compostela : Universidade de Santiago de Compostela, Servizo de Publicacións e Intercambio Científico, 2006
- Aguirre de Cárcer, Iñigo. Apuntes de meteorología y climatología para el medioambiente / Iñigo Aguirre de Cárcer y Pilar Carral . Madrid : Ediciones de la Universidad Autónoma de Madrid, D.L. 2008
- Barry, Roger G.. Atmósfera, tiempo y clima / Roger G. Barry, Richard J. Chorley . 7ª ed Barcelona : Omega, D.L. 1999
- Vallée, Jean-Louis. Guía técnica de meteorología / Jean-Louis Vallée ; Traducción y adaptación a la Península Ibérica por Bernat Codina Sánchez y Augusto Burgueño Rivero Barcelona : Omega , D.L.2005
- Zúñiga López, Ignacio. Meteorología y climatología / Ignacio Zúñiga López, Emilia Crespo del Arco Madrid : Universidad Nacional de Educación a Distancia, 2009
- Complementary Bibliography
- Ledesma, Manuel. Principios de meteorología y climatología / Manuel Ledesma Jimeno . 1ª ed. Madrid : Paraninfo, 2011
- Ledesma Jimeno, Manuel. Climatología y meteorología agrícola / M. Ledesma Jimeno Madrid : Paraninfo, D.L. 2000