

25214 - Meteorology and climatology

Syllabus Information

Academic Year: 2020/21

Subject: 25214 - Meteorology and climatology

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 277 - Degree in Environmental Sciences
571 - Degree in Environmental Sciences

ECTS: 6.0

Year: 2

Semester: First Four-month period

Subject Type: Compulsory

Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, laboratory sessions, autonomous work and study and assessment tasks.

4.2.Learning tasks

This 6 ECTS (150 hours) course is organized as follows:

- **Lectures.** Including exposition of the theory and problems resolution.
- **Laboratory sessions.** They include oral presentations of the reports elaborated from the results obtained.
- **Assignment.** Elaboration of an assignment related with some environmental aspects of the course. Group work made of 3-4 students.
- **Autonomous work and study.**

4.3.Syllabus

This course will address the following topics:

Lectures

- 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

Practice sessions

- 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
 - 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.

4.4.Course planning and calendar

Information concerning the timetable, office hours, assessment dates and other details regarding this course will be provided by the teacher on the first days of class.

4.5.Bibliography and recommended resources

- BB** Aguirre de Cárcer, Íñigo. 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
- BB** Barry, Roger G.. Atmósfera, tiempo y clima / Roger G. Barry, Richard J. Chorley . 7ª ed Barcelona : Omega, D.L. 1999
- BB** 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
- BB** 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
- BB** Zúñiga López, Ignacio. Meteorología y climatología / Ignacio Zúñiga López, Emilia Crespo del Arco Madrid : Universidad Nacional de Educación a Distancia, 2009
- BC** Ledesma Jimeno, Manuel. Climatología y meteorología agrícola / M. Ledesma Jimeno Madrid : Paraninfo, D.L. 2000
- BC** Ledesma, Manuel. Principios de meteorología y climatología / Manuel Ledesma Jimeno . 1ª ed. Madrid : Paraninfo, 2011

The updated recommended bibliography can be consulted in: <http://psfunizar10.unizar.es/br13/egAsignaturas.php?id=10974>