Universitat Autònoma de Barcelona

2023/2024

Climate Change and Environmental Risk

Code: 104246
ECTS Credits: 6

Degree	Type	Year	Semester
2503710 Geography, Environmental Management and Spatial Planning	OB	2	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Prerequisites

Successful completion of the Physical Geography course.

Objectives and Contextualisation

To describe the functioning and operation of the climatic system from the knowledge and the understanding of the fundamental concepts of climatology. This subject considers atmospheric general circulation, introduced in the first course of Physical Geography. It includes the analysis of the terrestrial climatic system and the study of the factors and the elements of the climates of the Earth, and of the mechanisms that describe its climatic diversity. As detailed more during the first days of class, the subject also includes an obligatory field trip to a weather observatory.

Competences

- Critically analyse the relationship between society and the region applying the conceptual and theoretical framework of geography.
- Introduce theoretical and applied aspects of the main regional, environmental and urban policies in professional practice.
- Systematically analyse and interpret environmental, demographic, urban and landscape elements.

Learning Outcomes

1. Define environmental problems to understand global change.

2. Describe the main characteristics of global change.
3. Differentiate the different scales in the relation between anthropic action, climate change and social actions.
4. Differentiate the main scientific positions in terms of climate change.
5. Identify the social and regional consequences of different climate change scenarios.
6. Understand and interpret the main political directions on different scales to combat climate change.

Content

Bloc 1. Introduction. The Atmosphere.

Bloc 2. Components of the climatic system.

Bloc 3. Solar radiation and temperature.

Bloc 4. Humidity, clouds, and precipitation.

Bloc 5. Atmospheric pressure and winds. General atmospheric circulation.

Bloc 6. Regional study of climate. Climatic classifications.

Bloc 7. Climatic changes.

Bloc 8. The role of the global ocean.

Bloc 9. Past climatic changes from geologic archives.

Bloc 10. Field trip.

Methodology

1. Lecture and discussion
2. Individual student activity
3. Small group activities and exercises
4. Discussion and analysis
5. Practical exercises
6. Problem solving

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Directed activity (theoretical class)	29	1.16	6, 1, 2, 4
Practical sessions	12	0.48	6, 3, 5

Type: Supervised			
Field Trip	4	0.16	1, 2, 3, 5
Tutorials	4	0.16	
Type: Autonomous			
Practicals	56	2.24	6, 1, 2, 3, 5
Reading and study	35	1.4	6, 1, 2, 3, 4, 5

Assessment

Continuous assessment

There is a written quiz at the conclusion of each block, whereby students have a range of questions (short essay answer) and a certain amount of flexibility and choice. There is also a practical exercise connected to each block topic. The overall course grade is determined by performance in both theoretical and practical portions (50% each). A minimum satisfactory performance (5 over 10) is required from each portion of the course, in order to successfully complete the class. 70% of the course material is required to be completed in order to be evaluated.

Single assessment

Single assessment means a single assessment date, but not a single assessment activity. Students who take the single assessment must take a theoretical exam (50%) and hand in the field trip report (5%) and the solved exercises (45%) on the same day.

Plagiarism

VERY IMPORTANT: Partial or total plagiarising will immediately result in a FAIL (0) for the plagiarised exercise (first-year subjects) or the WHOLE SUBJECT (second-, third- and fourth-year subjects). PLAGIARISING consists of copying text from unacknowledged sources -whether this is part of a sentence or a whole text- with the intention of passing it off as the student's own production. It includes cutting and pasting from Internet sources, presented unmodified in the student's own text. Plagiarising is a SERIOUS OFFENCE. Students must respect authors' intellectual property, always identifying the sources they may use; they must also be responsible for the originality and authenticity of their own texts.
http://wuster.uab.es/web_argumenta_obert/unit_20/sot_2_01.html

Reviewing grades

In carrying outeach evaluation activity, the professor will inform students (on Moodle) of the procedures to be followed for reviewing all grades awarded, and the date on which such a review will take place.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Field trip deliverable	5	0	0	1, 2, 3, 5
Theoretical quizzes	50	4	0.16	6, 1, 2, 3, 4, 5
Writing Practicals	45	6	0.24	6, 1, 2, 3, 5

Bibliography

Bibliografia recomanada

El llibres en què es basa majoritàriament l'assignatura (i que es recomanen si se'n vol adquirir algun, donada la seva qualitat i el seu preu raonable) és:

CUADRAT, J.M. & PITA, M.F. (2000), Climatología. Madrid, Cátedra

MARTIN VIDE, J. (2005). Los Mapas del Tiempo. Mataró, Davinci

Bibliografia complementària

BARRY, R. G. I PERRY, A. H. (1973), Synoptic Climatology. Methods and Applications, London and New York, Methuen.

BATTAN, L. (1976), El tiempo atmosférico, Barcelona, Omega.

CATALA DE ALEMANY, J. (1986), Diccionario de Meteorología. Madrid, Alhambra.

CLAUSSE, R. Y FACY, L. (1968), Las nubes, Barcelona, Martínez-Roca.

DURAND-DASTES, F. (1972), Climatología, Barcelona, Ariel.

DURAND-DASTES, F. (1982), Geografía de los aires, Barcelona, Ariel.

ELSOM, P. (1990), La contaminación atmosférica., Madrid, Cátedra Geo menor.

FLOHN, H. (1968), Clima y tiempo, Madrid, Guadarrama.

GRIMALT , M. et al (1995). Els núvols. Guia de camp de l'atmosfera i previsió del temps. Ed. El Mèdol. Tarragona.

HARDY, R., et al (1985), El libro del clima, Madrid, Blume.

HIDY, G. M. (1972), Los vientos. Los origenes y el comportamiento del movimiento atmósferico, México, Reverté Mexicana.

HUFTY, A. (1984), Introducción a la Climatología, Barcelona, Ariel.

JORGE, J, Y RIVERA , J. (1992), Diccionari de Meteorologia. Barcelona , Universitat Politècnica de Catalunya.

LONGLEY, R. W. (1973), Tratado ilustrado de Meteorología, Buenos Aires, Ed. Bell.

MARTIN VIDE, J. (1984), Interpretación de los mapas del tiempo, Barcelona, Ketres.

MARTIN VIDE, J. (1991), Fundamentos de Climatología analítica, Madrid, Ed. Síntesis.

MARTIN VIDE, J. i OLCINA CANTOS, J. (1996), Tiempos y climas mundiales. Oikos-Tau, Vilassar de Mar.

MEDINA, M. (1973), Introducción a la Meteorología, Madrid, Paraninfo.

MEDINA, M. (1976), Meteorología básica sinóptica, Madrid, Paraninfo.

MILLER, A.A. (1951), Climatologia, Omega, Barcelona.

PAGNEY, P. (1982), Introducción a la Climatología, Barcelona, Oikos-Tau.

PAPADAKIS, J. (1980), El clima, Buenos Aires, Albatros.

PEDELABORDE, P. (1970), Introduction a l'étude scientifique du climat, Paris,

SEDES.

PETTERSEN, P. (1976), Introducción a la Meteorología, Madrid, Espasa-Calpe.

SUREDA, V. (1986), La Climatologia . Col. Coneguem Catalunya 10. La Llar del

LLibre, Sant Cugat del Vallès.

TANK, H. J. (1971), Meteorología, Madrid, Alianza.

TOHARIA, M. (1983), Tiempo y clima, Barcelona, Salvat.

VIAUT, A. (1975), La meteorología, Vilassar de Mar, Oikos-Tau.

VIERS, G. (1975), Climatología, Vilassar de Mar, Oikos-Tau.

There will also be selected readings that come from journal articles during the course.

Software

Office