

SUBJECT TEACHING GUIDE

G534 - Energy in the World Today

Degree in Early Childhood Education
Degree in Primary Education Teaching

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Early Childhood Education Degree in Primary Education Teaching			Type and Year	Optional. Year 3 Optional. Year 3
Faculty	School of Teacher Training				
Discipline	SUBJECT: ENERGY IN THE WORLD TODAY Module: Complementary or Specialised Training				
Course unit title and code	G534 - Energy in the World Today				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA				
Name of lecturer	ALFREDO FRANCO PEREZ				
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Other lecturers	ANDREA FERNANDEZ PEREZ				

3.1 LEARNING OUTCOMES

- Acquisition of physical concept of energy in all its forms. Understanding the meaning, value and quantification of "sources of energy". Understanding the current situation regarding reserves, use and future of different current and alternative energy proposals and socioeconomic implications involved.

- Knowledge of energy units and operational knowledge and ability to calculate the transformations between them.

4. OBJECTIVES

Acquisition of physical concept of energy in all its forms. Understanding the meaning, value and quantification of "sources of energy". Understanding the current situation regarding reserves, use and future of different current and alternative energy proposals and socioeconomic implications involved.

6. COURSE ORGANIZATION

CONTENTS

1	Energy comes in many forms: mechanical, thermal, chemical, nuclear, electromagnetic. energy. Forces, work and heat: expressions and most common units.
2	Transformation of energy: major processes of transformation of energy. Thermal and electrical machines.
3	Fossil fuels: coal, oil, gas, shale. Origin and consumption. Advantages and disadvantages.
4	Nuclear energy: nuclear fission and fusion. Advantages and disadvantages.
5	Renewable energy: hydro, solar, wind, biomass, tidal, ocean thermal. Expectations, advantages and disadvantages.
6	Energy in the world: economy and politics, environment, public perception, sustainability expectations.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Students will make brief presentations on topics of the course to their peers.	Others	No	No	20,00
Students will complete exercises and test during the course	Written exam	Yes	Yes	30,00
Students will take a final written exam as scheduled on the school calendar.	Written exam	Yes	Yes	50,00
TOTAL				100,00
Observations				
<p>Orthography. We understand that the university students have assumed the linguistic abilities in relation to the oral and written expression. Therefore, correctness in spelling, punctuation and grammar in the works and exams carried out is an essential and obligatory condition to overcome the subject.</p> <p>Plagiarism. In case of fraudulent (plagiarism) of the evaluation tests, the fraudulent accomplishment of the tests or evaluation activities will directly suppose the qualification of suspense '0' in the subject. It also implies to consider invalid any mark related to any assessment activity considered for an extraordinary assessment. Such situation will be informed to the Academic Center, as stated in their article number 32 of the University of Cantabria regulations for assessment methods.</p> <p>Citation rules. The APA Standards are assumed as a citation criterion for all academic works . Although these rules have different editions, as an initial reference we refer to the following link of the BUC: http://www.unican.es/buc/recursos/guias-y-tutoriales/guia?g=28</p> <p>Marks in case that the minimum mark is not reached in a test. If a student does not get the minimum required mark to approve an assessment test, then the subject global mark will be the minimum between 4,9 and the arithmetic mean of all the assessment tests, as it is stated in the article 35 of University of Cantabria regulations for assessment methods.</p> <p>Continuous evaluation. As it is stated in the assessment methods section, the students will be able to get, at least, the 40% of their final marks before the last lecture of the course, considering both the laboratory sessions and the works developed during the classes. In such a way, the article 17 of the University of Cantabria regulations for assessment methods is accomplished (at the end of the lectures period, the students had to be completed, at least, 40% of all the assessment activities involved in the subject final mark).</p>				
Observations for part-time students				
<p>In agreement with article 24 of the University of Cantabria regulation for assessment methods, part-time students have the right to a unique assessment. Part-time students may be subject of a unique assessment process. The unique assessment allows the part-time student to get the same marks than the students under continuous evaluation. The unique assessment may be exam and/or deliverable works. In some exceptional circumstances may be required to be present and to show proficiency in some face-to-face acitivities (laboratory sessions, clinical activities, seminars, etc.).</p>				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- 222 cuestiones sobre la energía / [autores Miguel Barrachina Gómez (et al).--[Madrid]: Forum Atómico Español, 1993.
- ¿Cuánta bioenergía puede producir Europa sin dañar el medio ambiente?. /Madrid : Centro de Publicaciones, Ministerio de Medio Ambiente, 2008.
- World energy outlook / International Energy Agency; Paris : Organization for Economic Cooperation and Development (OECD): International Energy Agency 2011.
- La energía del futuro y sus aplicaciones / Juan Aragonés, María Ángeles Hernández, José María Busquets. -- Barcelona: Tibidabo, 2007.
- Energía para el mundo de mañana: realidades, opciones, objetivos / Comisión del Consejo Mundial de la Energía.-- Madrid : Consejo Mundial de la Energía, Comité Español, D.L. 1993.
- Hombre y naturaleza : bases energéticas / Howard T. Odum, Elisabeth C. Odum. -- Barcelona : Omega, D.L. 1981.
- Las fuentes de energía / Carlos J. Pardo Abad. -- Madrid : Síntesis, D.L. 1993.
- Energías renovables / Antonio Creus Solé. -- 2ª ed. -- Barcelona . Ceysa, 2009.
- Energías renovables / Jaime González Velasco. -- Barcelona : Reverté, 2009.