

## SUBJECT TEACHING GUIDE

G1675 - Energy in the World Today

Degree in Early Childhood Education  
Degree in Primary Education Teaching

Academic year 2020-2021

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	G1675 - Energy in the World Today		
Number of ECTS credits allocated	6	Term	Semester based (1)
Web			
Language of instruction	English	Mode of delivery	Face-to-face

Department	DPTO. FISICA APLICADA		
Name of lecturer	MIGUEL ANGEL GONZALEZ SAN JOSE		
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Other lecturers			

### 3.1 LEARNING OUTCOMES

- Acquisition of physical concept of energy in all its forms. Understanding the meaning, value and quantification of the "sources of energy." Understanding the current situation regarding reserves, use and perspectives 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 the physical concept of energy in all its forms. Understanding the meaning, value and quantification of "energy sources". Understanding the current situation regarding resources, use and perspectives of the various current and alternative energy proposals and related socio-economic implications.

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

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
The practical work will consist of different oral presentations, individual and / or in group, with the subsequent debate, made during the class hours, related to the contents that are being taught. By its very nature, therefore, it is not recoverable.	Others	No	No	20,00
The continuous evaluation will consist of a set of tests and written and / or verbal exercises, carried out during the class hours, in which the student will show the conceptual, vocabulary and operative level that will be acquired as the program is deliv	Others	No	No	30,00
Students will take a final written exam as scheduled on the school calendar.	Written exam	Yes	Yes	50,00
<b>TOTAL</b>				<b>100,00</b>
<b>Observations</b>				
<p><b>PLAGIARISM:</b> Regarding the fraudulent performance (plagiarism) of the evaluation tests, the qualification will be adjusted to the established in the article 54.1 of the Regulation of the evaluation processes in the University of Cantabria: 'The fraudulent realization of the tests or activities evaluation will directly involve the grade of '0' in the subject '.</p> <p><b>CITATION RULES:</b> Finally, the School Board approved that the Faculty assumes the APA RULES for all academic work as citation criteria . Although these standards have different editions , as an initial reference we attach the BUC link, hoping that this will be helpful and a reference for its development: <a href="http://web.unican.es/buc/recursos/guias-y-tutoriales/guia ? g = 28">http://web.unican.es/buc/recursos/guias-y-tutoriales/guia ? g = 28</a></p>				
<b>Observations for part-time students</b>				
The evaluation for part-time students will be the same as for the students in the face-to-face mode.				

## 8. BIBLIOGRAPHY AND TEACHING MATERIALS

### BASIC

- ¿How much bioenergy can Europe produce without harming the environment?. / 2006. -- Luxemburgo. : OPOCE.
- World energy outlook 2011 / International Energy Agency ;  
[directed by Fatih Birol]. -- Paris : Organization for Economic Co-operation and Development (OECD) :International Energy Agency. 2011.
- Energy : physical, environmental, and social impact / Gordon J. Aubrecht. -- 3rd ed. -- Upper Saddle River : Pearson Prentice Hall, cop. 2006.
- ENERGY : readings from scientific american / with introductions by S. Fred Singer. -- San Francisco : W. H. Freeman, cop. 1979.
- ENERGY resources and the environment / general editors, John Lenihan and William W. Fletcher. -- Glasgow ; London : Blackie, cop. 1975.
- Ciencia ambiental : un estudio de interrelaciones / Eldon D. Enger, Bradley F. Smith ; con contribuciones de Anne Todd Bockarie - México, D.F. : McGraw-Hill, 2006.
- Energías renovables / Jaime González Velasco. -- Barcelona : Reverté, [2009]
- Energías renovables / Francisco Jarabo Friedrich, Nicolás Elortegui Escartín. -- 2ª ed. -- Madrid : S.A.P.T. Publicaciones Técnicas, 2000.
- Energía y conflictos internacionales : política, tecnología y cooperación / Emilio Menéndez Pérez, Andrés Elías Feijóo Lorenzo. -- [Oleiros (La Coruña)] : Netbiblo, [2005]  
<http://www.eia.gov/energyexplained/>