



Course Unit: 691506–Themes in the Physical and Social World

Year 1 Semester 1 ISCED Code: 143/144 ECTS: 5,5

Type of Course Unit: Compulsory Delivery Mode: Face-to-face Language of Instruction: Portuguese

COURSE COORDINATOR: António Carloto

HOURS OF WORK

| TOTAL HOURS | Contact Hours | | | | | | | | Hours in autonomous work |
|-------------|---------------|---------------------|-------------------------------|------------|---------|------------|-------------------|-------|--------------------------|
| | Theory | Theory and practice | Practical and laboratory work | Field work | Seminar | Internship | Tutorial guidance | Other | |
| 137,5 | 10 | 40 | | | | | 25 | | 62,5 |

LEARNING OUTCOMES (knowledge, skills and competence)

1. Knowing the physical environment of Portugal
2. Knowing the potential of water resources in Portugal
3. Understanding the basics of regional differentiation of our country
4. Critically analyze the consequences of the integration of Portugal in the European Union
5. Analyze the relationship between the physical, social and human characteristics of places and regions and the national productive activities
6. Identify the main causes and consequences of the loss of natural diversity
7. Critically analyze the causes of global warming and its relation to climate change
8. Understand the electromagnetic phenomena and their presence in nature
9. Identify the renewable and non-renewable sources of energy production
10. Knowing the scientific fundamentals of their functioning
11. Knowing the environmental and technological impact of each source of energy
12. Identify the components of the solar system and the Universe
13. Knowing the role of the gravitic attraction in their dynamic
14. Knowing the lifecycles of the stars and their impact in the Universe
15. Knowing the astronomic observation technics
16. Understand the differences between the distinct states of matter
17. Knowing the fundamental properties and the technological applications that explore the distinct states of matter
18. Understand the fundamental chemical processes associated with the production of materials
19. Understand the fundamental chemical processes in living beings
20. Knowing the chemical processes associated with the transformation of food with cooking
21. Knowing the chemical processes associated with environmental quality; in air, water, soil; the impact of this processes on living beings

CONTENTS

1. Geological evolution of Portugal
2. Portugal and water resources: challenges and opportunities
3. Structuring and planning of territory and external relations
4. Rural, urban and industrial activities
5. The loss of natural diversity: origins and consequences
6. Climate and global warming
7. Electricity and magnetism
8. Energy
9. The Solar system and the Universe
10. States of matter
11. Everyday chemistry: polymers, living beings, food and environment

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

1. Geological evolution of Portugal (obj. 1)
2. Portugal and water resources: challenges and opportunities (obj. 2)
3. Structuring and planning of territory and external relations (objs. 3 and 4)
4. Rural, urban and industrial activities (obj. 5)
5. The loss of natural diversity: origins and consequences (obj. 6)
6. Climate and global warming (obj. 7)
7. Electricity and magnetism (obj. 8)
8. Energy (objs. 9, 10 and 11)
9. The Solar system and the Universe (objs. 12, 13, 14 e 15)
10. States of matter (objs. 16 and 17)
11. Everyday chemistry: polymers, living beings, food and environment (objs. 18, 19, 20 and 21)

TEACHING METHODOLOGIES

The teaching methodologies applied in this unit involve the use of various strategies, namely: a few moments of exposure in charge of lecturer, analysis of documents; multimedia exploration, study visits; conducting small work, laboratorial or other, during the sessions.

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

- Moments of lecturing by teachers (objs. 1-21)
- Analysis of documents (objs. 3,4,5,6 e 7)
- Study visits (objs. 1,2)
- Conducting small work, laboratorial or other, during sessions (objs. 8-21)

EVALUATION METHODS

- Active participation in classes and visits (20%)
- Work (40%)
- Reflection on the individual evolution during the training process (40%)

MAIN BIBLIOGRAPHY

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Sá Marques, T. (2004). Portugal na transição do século. Retratos e dinâmicas territoriais. Porto: Ed. Afrontamento.

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OTHER RESOURCES IN THE WEB

<http://www.esa.int/esaKIDSen/>

<http://www.nasa.gov/audience/forkids/kidsclub/flash/index.html#.VBmLRv7Mbl4>

<http://www.nasa.gov/audience/forstudents/k-4/>

<http://www.sciencekids.co.nz/physics.html>

<http://www.worldwidetelescope.org/>

<https://www.google.com/moon/>

<https://www.google.com/mars/>

<https://www.google.com/sky>

http://eia.gov/kids/energy.cfm?page=renewable_home-basics

http://www.ecokids.ca/pub/eco_info/topics/renewable_energy/

<http://www.apren.pt/pt/energias-renovaveis/o-que-sao/>

<http://www.ipbs.info/ecoescolas/?cat=8>

<http://www.sciencekids.co.nz/chemistry.html>

<http://www.acs.org/content/acs/en/education/whatischemistry/adventures-in-chemistry.html>

<http://chemistryforlife.org/>

<http://www.acs.org/content/acs/en/education/whatischemistry/everywhere.html>