UNIVERSIDADE LUSÍADA
LISBOA

Course Unit Program
Physics

Academic Year 2024/2025

1. Organic Unit

Faculty of Business and Economic Sciences

2. Course

Computer Engineering

3. Cycle

1st

4. Course Unit

Physics (L9012)

5. Scientific Area

6. Curricular Year

2nd

7. Type of Curricular Unit / Semester

1st Semester

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8. Class type and workload (work time)

Theoretical classes:	
Practical classes:	
Theoretical-Practical Classes	30,00
Tutorial Guidance:	20,00

9. ECTS Credits

6,00

10. Scientific Area Coordinator

11. Regent

Prof. Doutor JOAQUIM MESQUITA DA CUNHA VIANA

12. Assistants

13. Teaching Language

Portuguese

14. General Objectives

To teach the Basic concepts related to Electricity, Electromagnetism and Optics

15. Specific Objectives

To introduce the principles and applications of Electricity, magnetism and Optics
To get to understand the physics basis of engineering, in what concerns Electricity, magnetism and optics through the understanding of the basic phenomena of each of these areas of knowledge.
To be able to understand and apply the laws that rule Electric, Magnetic and Optical behavior.
To get to know some of the applications resulting from that behavior.

16. Skills to be acquired

Some capacity to apply the rules of Electricity, Electromagnetism and Optics
To specific situations

17. Teaching Methodology

Lecturing Will be based on the oral transmission of information related to the subjects being studied, followed by the resolution of adequately related exercises.

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18. Course Unit Program

1. ELECTRIC CHARGES AND COULOMB?S LAW
2. ELECTRIC FIELD
3. GAUSS?S LAW
4. ELECTRIC POTENTIAL
5. CAPACITANCE AND DIELECTRICS
6. CURRENT AND RESISTANCE
7. CONTINUOUS CURRENT CIRCUITS
8. MAGNETIC FIELD
9. FARADAY?S LAW
10. ELECTROMAGNETIC INDUCTION
11. ALTERNATE CURRENT CIRCUITS
12. ELECTROMAGNETIC WAVES
13. THE NATURE OF LIGHT AND THE LAWS OF GEOMETRIC OPTICS
14. INTERFERENCE OF LIGHT WAVES

19. Assessment Methods

According to the school?s internal regulations, grading Will have a continuous component, as well as a frequency test. The continuous component will consist of:
Class attendance
2 theoretical tests
In case the student gets benefit from it, the final grade will be limited to the grade obtained in the frequency test, otherwise it will be the waged average of the grades achieved in the frequency test and the continuous component.

20. Didactic Resources

21. Sustainability Objectives

4. Quality Education
5. Gender Equality
9. Industry, Innovation and Infrastructure
11. Sustainable Cities and Communities

22. Keywords

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23. Main Bibliography

Author(s):	Loureiro, J.		
Title:	ELETROMAGNETISMO E ÓTICA		
Edition:	1	Year:	2019
Local:	Lisboa		
Publisher:	IST Press		

Author(s):	Giancoli, Douglas C.		
Title:	Physics Principles With Applications		
Edition:	7	Year:	2015
Local:			
Publisher:	Pearson Education Limited		

Author(s):	Tipler & Mosca		
Title:	Física para Cientistas e Engenheiros, vol. 2 (Electricidade e Magnetismo, Óptica.)		
Edition:	6	Year:	2000
Local:			
Publisher:	LTC - GRUPO GEN		

24. Complementary Bibliography

Author(s):	Tipler & Mosca		
Title:	Physics for scientists and engineers		
Edition:	6	Year:	2007
Local:			
Publisher:	W. H. Freeman		

Author(s):	Serway, R.A. & Jewett, J. W.		
Title:	Physics for Scientists and Engineers with Modern Physics.		
Edition:	10	Year:	2018
Local:			
Publisher:	Cengage Learning		

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Ficha técnica MIP / MIP Datasheet	
Título / Title	Course Unit Program 'FÍSICA': Academic Year 2024/2025
Autor / Author	Prof. Doutor JOAQUIM MESQUITA DA CUNHA VIANA
Classificação / Classification	-
Descritores / Descriptors	-
Colaborador(es) / Colaborator(s)	-
Data Hora / Date Time	
Formato de dados / Data Format	Texto / Text, PDF
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