

Course Unit	Physics		Field of study	Physic Sciences	
Bachelor in	Environmental Engineering		School	School of Agriculture	
Academic Year	2022/2023	Year of study	1	Level	1-1
Type	Semestral	Semester	2	ECTS credits	6.0
Code	9099-309-1203-00-22				
Workload (hours)	162	Contact hours	T 30	TP -	PL 30
			TC -	S -	E -
			OT 20	O -	

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Felícia Maria Silva Fonseca

#### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

Have a fulfillment understanding of some domains of Physics science; Recognize the importance of learning outcomes through academic life.

#### Prerequisites

Before the course unit the learner is expected to be able to:

Apply knowledge of: Trigonometry; Resolution of equation's systems; Differentiation and Integration.

#### Course contents

Mechanics; Thermodynamics; Fluid Mechanics.

#### Course contents (extended version)

1. Mechanics
  - Physical Quantities; Standards and Units
  - Vectorial Algebra
  - Kinematics
  - Dynamics
  - Static
  - Work and Energy
  - Impulse and Linear Moment
  - Conservation of Energy
2. Thermodynamics
  - Thermodynamics Systems
  - Kinetic Theory
  - Zero Law of Thermodynamics
  - First Law
  - Thermodynamic's Transformations/Specific Heat
  - Second Law
  - Third Law
  - Entropy
3. Fluids
  - Physical properties
  - Fundamental Equation of Hydrostatics
  - Archimedes's Principle
  - Pascal's Principle
  - Equation of Continuity
  - Bernoulli's Equation

#### Recommended reading

1. Alonso, M. , Finn, E. J. , 1999. Física. Addison-Wesley.
2. Haliday D. , Resnick R. , Walker, J. , 2012. Fundamentos de Física. Volume 1, 2 e 3 9ª Edição, GEN.
3. Apontamentos elaborados pelos docentes da UC.

#### Teaching and learning methods

Theoretical knowledge is accomplished by expositive method, using: blackboard, transparencies or data-show. At two ours classes, that aren't laboratorial, lessons are performed, in which, students learn strategies to solve exercises, and, they must participate on discussion about the best way how to get a solution.

#### Assessment methods

1. With mid-term evaluation - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 50% (Corresponds to 3. 0 ECTS.)
  - Final Written Exam - 50% (Corresponds to 3. 0 ECTS.)
2. Evaluation in final exam - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 100% (Corresponds to 6. 0 ECTS.)

#### Language of instruction

Portuguese, with additional English support for foreign students.

#### Electronic validation

Felícia Maria Silva Fonseca	Tomás de Aquino Freitas Rosa Figueiredo	Artur Jorge de Jesus Gonçalves	Maria Sameiro Ferreira Patrício
06-12-2022	06-12-2022	08-12-2022	19-12-2022