

Materia 1_3: Fundamental of Physics

Materia:	Fundamentals of Physics	ECTS:	10
Descriptor	<ul style="list-style-type: none">• Introduction to physics, measurement, and modelling. Kinematics. Dynamics: Newton's laws. Work and energy. Rigid body. Oscillations. Waves.• Basics of thermodynamics: temperature and laws of thermodynamics. Basics of electromagnetism: electric field and potential, magnetic field. Maxwell's laws and electromagnetic waves.		
Objetivos generales	This subject has the objective of achieving the basic knowledge in physics necessary to deal with engineering problems and applications		
Competencia específica	CE[1-3]: Understand the basic concepts of the general laws of mechanics, thermodynamics, fields, waves and electromagnetism and their application to solve engineering problems.		
Resultados de aprendizaje	<ul style="list-style-type: none">• To understand the concepts of quantities, measurements and modelling and to evaluate this in science/engineering cases.• To know and to apply the fundamental principles of mechanics and the practical implementation in simple systems.• To understand the oscillation and wave models, the parameters and physics involved and its application in engineering. • To understand the thermodynamic concepts: temperature, heat, entropy, etc, and its application through the thermodynamics laws in simple systems.• To calculate electric fields, forces and potentials for electric charges.• To calculate magnetic fields and forces due to or affecting electric currents.• To know and apply Maxwell's laws for problem-solving in engineering.		
Métodos de evaluación	<ul style="list-style-type: none">• Evaluation: Tests. Written open-ended test and problems. pilot project.• Evaluation instruments: Checklists and Assessment scales through rubrics.		