COURSE NAME

Name: **PHYSICS II**
Code: 101186
Curriculum: **DEGREE IN ENERGY ENGINEERING AND MINERAL RESOURCES** Year: 1
ECTS Credits: 6 Classroom hours: 60
Face-to-face classroom percentage: 40% Non-contact hours: 90
Online platform: http://www3.uco.es/amoodle

FACULTY DETAILS

Name: MUÑOZ ESPADERO, JOSÉ (Coordinator)
Department: PHYSICS
area: APPLIED PHYSICS
Location of the office: Edificio Albert Einstein, ground floor
E-mail: f72muesj@uco.es Phone number: 957212162

SKILLS

CB1	Have and understand specific knowledge of the study area of the Degree that gives skills for the exercise of the profession of Technical Mining Engineering.
CB2	Have and understand updated and cutting-edge knowledge related to the field of study of the degree of Technical Mining Engineering.
CB3	Apply knowledge in professional contexts and develop and defend arguments in the field of knowledge of mining engineering.
CB4	Solve problems within the study area of Mining Engineering.
CB6	Disclose information, ideas, problems and solutions to both specialised and non-specialised public.
CB7	Have the necessary learning skills to undertake studies with a high level of autonomy.
CU2	Know and refine the user level of ITs.
CEB4	Understand and master basic concepts regarding the general laws of mechanics, thermodynamics, fields and waves and electromagnetism, as well as application thereof to the solving of engineering-related problems.

OBJECTIVES

Students should be able to:

1. Build up intuition in physics. Management of basic conceptual structures of physics applied to engineering.
2. Understand that the way of working in physics involves identifying the essence of phenomena.
3. Get started with the modelling and solving of simple physical problems applied to engineering.
4. Learn the conceptual bases of thermodynamics, electricity and magnetism.

CONTENTS:

1. Theoretical contents

BLOCK I. THERMODYNAMICS

UNIT 1. TEMPERATURE AND HEAT.

UNIT 2. THERMODYNAMIC PROCESSES

BLOCK II. ELECTRICITY.

UNIT 3. ELECTROSTATICS.

UNIT 4. ELECTROSTATICS IN MATERIAL ENVIRONMENTS.

UNIT 5. DIRECT CURRENT.

BLOCK III. MAGNETISM

UNIT 6. MAGNETOSTATICS.

UNIT 7. MAGNETIC PROPERTIES OF MATERIALS.

UNIT 8. ELECTROMAGNETIC INDUCTION.

UNIT 9. ALTERNATING CURRENT.

2. Practical contents.

Practical development of theoretical contents.