COURSE NAME

Name: **THERMAL TECHNOLOGY**
Code: 101196
Curriculum: **DEGREE IN ENERGY ENGINEERING AND MINERAL RESOURCES** Year: 2
Name of the module to which it belongs: COMMON MODULE FOR THE MINING BRANCH
Subject: THERMAL TECHNOLOGY
Nature: OBRIGATORY Duration: SECOND SEMESTER
ECTS Credits: 3 Classroom hours: 30
Face-to-face classroom percentage: 40% Non-contact hours: 45

FACULTY DETAILS

Name: MUÑOZ ESPADERO, JOSÉ (Coordinator)
Department: PHYSICS
Area: APPLIED PHYSICS
Location of the office: Escuela Politécnica Superior de Belmez – First floor
E-Mail: f72muesj@uco.es Phone number: 957 21 21 62

SKILLS

CB1	Have and understand specific knowledge of the field of study of mining engineering.
CB2	Have and understand current and cutting-edge knowledge of the field of mining engineering.
CB3	Be able to apply the knowledge acquired in professional contexts and to elaborate 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.
CEC4	Compression and mastery of the basic concepts, the general laws of mechanics and thermodynamics and their application to solve engineering problems. Heat and matter transfer and thermal machines.

OBJECTIVES

- Understanding the principles of thermodynamics and their consequences.
- Understanding the direct relationship between thermodynamic formalism and its application to engineering.
- Understanding the principles, techniques and instruments of measurement and the phenomena of interest in thermotechnology.
- Understanding the fundamentals of Heat conduction and Matter and Thermal Energy conversion: Combustion, Thermal Engines, etc.
- Recognising and understanding how to calculate the main power and refrigeration cycles.

CONTENTS:

1. Theoretical contents

Topic 1. Fundamentals of Thermotechnology.
Topic 2. Power Cycles.

Topic 3. Refrigeration.
Topic 4. Combustion.
Topic 5. Heat Transmission.

2. Practical contents.

Solving practical cases related to the theoretical course content