

COURSE NAME

Name: **ROADS**

Code: 101145

Curriculum: **DEGREE IN CIVIL ENGINEERING**

Year: 3

Subject: SPECIFIC CIVIL CONSTRUCTION TECHNOLOGY MODULE

Nature: OBRIGATORY Duration: SECOND SEMESTER

ECTS Credits: 6

Classroom hours: 60

Face-to-face classroom percentage: 40%

Non-contact hours: 90

FACULTY DETAILS

Name: JIMÉNEZ ROMERO, JOSÉ RAMÓN (Coordinator)

Department: RURAL ENGINEERING

Area: CONSTRUCTION ENGINEERING

Location of the office: EPS Belmez / Edificio Leonardo Da Vinci (C. Rabanales)

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Name: PÉREZ GALVIN, ADELA

Department: RURAL ENGINEERING

Area: CONSTRUCTION ENGINEERING

Location of the office: EPS Belmez / Edificio Leonardo Da Vinci (C. Rabanales)

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Name: SUESCUM MORALES, DAVID

Department: RURAL ENGINEERING

Area: CONSTRUCTION ENGINEERING

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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.
- CB7 Possess the learning skills necessary to undertake studies with a high degree of autonomy.
- CU2 Know and refine the user level of ITs.
- CECC4 Ability to construct and maintain roads, as well as to dimension, design, and the elements that make up the basic roadway facilities.

OBJECTIVES

Understand the basic characteristics of the road network.

Understand the characteristic variables of road traffic.

Calculate the capacity and level of service in continuous circulation.

Create a project and design a road in plan and elevation, and its coordination.

Design and dimension road surface sections: levelled areas and pavements.

Understand the drainage systems and roadway facilities.

Understand and apply the technical regulations for constructing, maintaining and operating roads.

CONTENTS:

1. Theoretical contents

I. BASIC CHARACTERISTICS OF THE ROAD NETWORK AND TRAFFIC STUDIES

- TOPIC-1. BASIC CHARACTERISTICS OF THE ROAD NETWORK.
- TOPIC-2. ROAD PROGRAMMING AND PLANNING.
- TOPIC-3. CHARACTERISTIC VARIABLES OF ROAD TRAFFIC.
- TOPIC-4. CAPACITY AND SERVICE LEVELS IN CONTINUOUS CIRCULATION.

II. GEOMETRIC DESIGN OF ROADS

- TOPIC-5. BASIC CONCEPTS OF GEOMETRIC ROAD DESIGN: LAYOUT.
- TOPIC-6. SPEED AND VISIBILITY.
- TOPIC-7. PLAN LAYOUT.
- TOPIC-8. ELEVATION LAYOUT.
- TOPIC-9. COORDINATING GROUND PLAN AND ELEVATION.
- TOPIC-10. THE CROSS SECTION, ADDITIONAL LANES AND OTHER LAYOUT ELEMENTS.
- TOPIC-11. INTERCHANGES: INTERSECTIONS AND JUNCTIONS.

III. INFRASTRUCTURE, ROAD SURFACES AND PAVEMENTS

- TOPIC-12. LEVELLING AND GRADING.
- TOPIC-13. ROAD SURFACES AND PAVEMENTS.
- TOPIC-14. SURFACE DRAINAGE ON ROADS.

IV. ROADWAY FACILITIES

- TOPIC-15. ROADWAY FACILITIES

2. Practical contents.

- Capacity and service level issues.
- Geometric design problems: layout.
- Grading and road surface project using computer applications (ICAFIR)
- Seminar on Professional Associations (face-to-face or virtual)
- Technical Visit (subject to availability of works and companies)