

FACULTY OF **ENGINEERING**

DEGREE COURSE: **CIVIL AND ENVIRONMENTAL ENGINEERING**

MASTER DEGREE: **CIVIL ENGINEERING**

SUBJECT: ROAD DESIGN

LECTURER: EDOARDO BOCCI

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OBJECTIVES

The course deals with the general aspects concerning the project of a road infrastructure, including geometrical design, the materials, the construction and the controls. The goal for the students is to understand the technical-scientific basis which regulates the design and the construction of road infrastructures.

CONTENTS

- Part 1 – Geometric design: road classification, vertical and horizontal alignment, transition curves, vertical links, sight distances, design speed, pavement design, road intersections.
- Part 2 – Road materials and construction: pavement types, soil classification, subgrade preparation, soil stabilization, aggregates, cement treated mixtures, construction of foundation layers, bitumen and bituminous binders, asphalt concrete production, pavement construction.

LEARNING OUTCOMES

At the end of the path, the student will have obtained the basic knowledge for geometric and structural design of road infrastructures.

ASSESSMENT

Written exam: multiple choice and open questions

RECOMMENDED TEXTBOOKS

- Roberts F.L., Kandhal P.S., Brown E.R., Lee D.Y., Kennedy T.W., “Hot mix asphalt materials, mixture design and construction”, NCAT, 3^o edition, 2010.
- Mallick R.B., El-Korchi T., “Pavement Engineering: Principles and Practice”, Second Edition, CRC Press, 2013.
- AASHTO (American Association of State Highway and Transportation Officials), “A Policy on Geometric Design of Highways and Streets”, 6th Edition, 2011.