



COURSE: Part of "DESIGN OF ROADS, RAILWAYS AND AIRPORTS" (3 ETCS)

(included in Materials for Roads, Railways and Airports construction + Design of Roads, Railways and Airports - 12 ETCS)

TEACHER: Donato CIAMPA (3 ETCS), Michele AGOSTINACCHIO (Person in charge - 9 ETCS)

e-mail: [donato.ciampa@unibas.it](mailto:donato.ciampa@unibas.it)

website:

Language: **Italian**

ECTS: **3**

n. of hours: **27**

Academic year: **2015-16**

Campus: **Potenza**

Semester: **Annual**

#### TOPICS

Advanced geometric design. Rockfalls. Railway track engineering. Retaining structures. Mechanically stabilized earth. Road barriers.

#### TEACHING METHODS

⊗ Theoretical lessons

⊗ Tutorials in classroom

□ Tutorials in laboratory

⊗ Project works

⊗ Technical visits

Other activities: Numerical exercises

#### TEXTBOOKS

M. Agostinacchio, D. Ciampa, S. Olita, *Strade Ferrovie Aeroporti* III edizione, EPC Srl, Roma.

M. Agostinacchio, D. Ciampa, S. Olita, *La Progettazione delle Strade* II edizione, EPC Srl, Roma.

M. Agostinacchio, S. Olita, *Elementi di ritenuta paramassi*, EPC Libri, Roma.

P. Ferrari, F. Giannini, *Ingegneria Stradale* Vol. 1 e 2, ISEDI.

F. Giannini, F. La Camera, A. Marchionna, *Appunti di Costruzione di Strade Ferrovie ed Aeroporti*, Masson ed. ESA.

F. La Camera, *Il calcolo del progetto stradale la planimetria*, Masson ed. ESA.

Course notes provided by the professor.

ON-LINE EDUCATIONAL MATERIAL (web address):

#### LEARNING OUTCOMES

Acquire the theoretical tools and techniques addressed in the design and the advanced design of the road and rail infrastructures in relation to the environmental impact.

REQUIREMENTS: It is suggested to pass previously the exam of "Basics of Roads, Railways and Airports".

#### EVALUATION METHODS

□ Intermediate verifications

□ Written examination

⊗ Discussion of a project work

□ Practical test

⊗ Oral examination

Other methods: Evaluation of numerical exercises.

#### DETAILED CONTENT

Advanced road and rail axis geometry. Design of intersections ramps. Design of retaining structure. Design of reinforced earth. Rockfalls. Road barriers. Level of Service (LOS) of road infrastructures.

#### EXAMINATION SESSIONS (FORECAST)

17/02/2016; 23/03/2016; 20/04/2016; 18/05/2016; 22/06/2016; 20/07/2016; 21/09/2016; 19/10/2016; 23/11/2016; 14/12/2016.

SEMINARS BY EXTERNAL EXPERTS YES  NO

#### FURTHER INFORMATION

The didactic organization provides for 27 total hours of which 16 hours of lecture and 11 of practice. The certificate of attendance of didactic activities is ex-officio satisfied at the end of the semester in which they are located.