Università degli Studi della Basilicata
Scuola di Ingegneria

COURSE: **Materials for Roads, Railways and Airports construction**

TEACHER: **Michele Agostinacchio**

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Language: **Italian**

ECTS: **9**	n. of hours: **81**	Academic year: **2014-15**	Campus: **Potenza**	Semester: **I**

TOPICS

The construction of the road structure. The bituminous binders and the rheology of bitumens. The mixtures used in road superstructures. Design of pavements. Elements for the railways construction.

TEACHING METHODS

X Theoretical lessons
X Tutorials in classroom
□ Tutorials in laboratory
X Project works
X Technical visits
Other activities (please specify)

TEXTBOOKS

Ferrari P., Giannini F., "*Ingegneria Stradale*" Vol. 2, ISEDI.
Tesoriere G., "*Strade Ferrovie Aeroporti*", Vol. 2, UTET.
Course notes provided by the professor.

ON-LINE EDUCATIONAL MATERIAL

web address:

LEARNING OUTCOMES

Acquire the theories and techniques aimed at construction and testing of rail and road infrastructure through the study of traditional and innovative materials, subjected to the stresses induced by dynamic loads. Tackle the problems relating to stability and computational analysis, both static and dynamic, of the road structures and pavements.

REQUIREMENTS

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

EVALUATION METHODS

□ Intermediate verifications
□ Written examination
X Discussion of a project work
□ Practical test
X Oral examination
Other methods: Evaluation of numerical exercises.

DETAILED CONTENT

The construction of the road structure. Elements of road geotechnics. The stone aggregates. The bituminous binders. Rheology of bitumen and SHRP program. Mixtures used in pavements. The traditional asphalt concretes. The non-traditional asphalt concretes. The contract specifications for road work. The use of C&D in road construction. Approach to the design of road pavements and catalogs of superstructures. Design of flexible, semi-rigid and rigid pavements: empirical, semiempirical and rational calculations methods. Use of calculation codes for automatic design of roads, railways and airports. Overview of quality control. Elements for the railways construction: materials and techniques.

SEMINARS BY EXTERNAL EXPERTS YES X NO □

FURTHER INFORMATION

The didactic organization provides for 81 total hours of which 48 hours of lecture and 33 of practice. The certificate of attendance of didactic activities is ex-officio satisfied at the end of the semester in which they are located.